DOCUMENT RESUME

ED 321 151 CE 055 454

AUTHOR	Neubauer, Antonia; Dusewicz, Russell
TITLE	The Philadelphia Literacy Study.
INSTITUTION	Research for Better Schools, Inc., Philadelphia, Pa.
SPONS AGENCY	Atlantic Richfield Foundation, Los Angeles, CA.; Pew Memorial Trust, Philadelphia, Pa.
PUB DATE	88
NOTE	115p.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	Academic Aspiration; Adult Literacy; *Adults; Dropouts; Educational Assessment; Functional Literacy; *Illiteracy; Minority Groups; Poverty; *Reading Achievement; Unemployment
IDENTIFIERS	National Assessment of Educational Progress; *Pennsylvania (Philadelphia)

ABSTRACT

A study investigated the nature and extent of adult illiteracy and the characteristics of the less literate populations in Philadelphia. Data were collected through 2,197 telephone interviews and 607 personal interviews. The personal interviews involved use of a modified version of the instrument developed by the National Assessment of Educational Progress (NAEP) for its young adult literacy project. Among the findings were that: (1) probably no more than 12 percent of Philadelphians are functionally illiterate; (2) another 21 percent are performing at a rather low level--below ninth grade functioning; (3) since these poor basic skills belonged to persons in groups that had high unemployment and low levels of income, their lack of literacy skills probably has affected the ability of almost one-third of Philadelphia's citizens to be productive; (4) lower literate persons tend to be older, members of minority groups, high school dropouts, and unemployed, and earn less than $10,000 annually; (5) lower literate persons often have poor opinions of their schooling and themselves as learners, although they have relatively high aspirations for further education; (6) lower literate persons have highly developed coping skills for reducing or circumventing the problem posed by reading and writing tasks; (7) many in this group read newspapers, magazines, and books, although with less frequency and fluency than more literate people; (8) many see little reason to upgrade their literacy skills because of their adaptive abilities; (9) lower literate persons know where to go to seek help with basic skills, but few choose to enroll and stay in the programs. (34 references) (CML)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED321151

CE

The Philadelphia Literacy Study

Dr. Antonia Neubauer, Project Director
Dr. Russell Dusewicz, Director of Evaluation

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

E Kwonke

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

RBS
Research for Better Schools
444 North Third Street
Philadelphia, PA 19123

1988

CE055454

BEST COPY AVAILABLE

THE PHILADELPHIA LITERACY STUDY

Submitted to

Ms. Rebecca Rimel
The Pew Charitable Trusts
3 Parkway, Suite 501
Philadelphia, PA 19102-1305

Submitted by

Dr. Antonia Neubauer, Project Director
Dr. Russell Dusewicz, Director of Evaluation

Research for Better Schools
444 North Third Street
Philadelphia, PA 19123
(215) 574-9300

June 15, 1988

This publication, The Philadelphia Literacy Study, was funded in part by the Pew Charitable Trusts and the ARCO Foundation. The opinions expressed do not necessarily reflect the position or policy of the sponsors, and no endorsement should be inferred.

© 1988 Research for Better Schools

Printed in the United States of America

ACKNOWLEDGMENTS

Many people have given invaluable support and assistance in the design and execution of this study. The authors would like particularly to thank Dr. Marciene Mattleman, head of the Mayor's Commission on Literacy in Philadelphia, for her advice and her efforts to make this project a success. We are most grateful to the members of our advisory committee -- Ms. Melissa Buckingham from the Free Library of Philadelphia; Ms. JoAnne Weinberger from the Center for Literacy; Ms. Carole Goertzel from the Lutheran Settlement House; Ms. Jackie Nix-Starks from the YMCA; and Ms. Linda Pollack, Dr. Lucille Richards, and Ms. Jean Spriggs from the Mayor's Commission on Literacy -- for their very constructive advice throughout the duration of the study. Thank you to Dr. Irwin Kirsch for his time and assistance and to Educational Testing Service for permission to reproduce some of their materials. Much appreciation must go also to the Pew Charitable Trust and to the ARCO Foundation for their financial support. Finally, to Dr. John Connolly, Dr. Keith Kershner, and Ms. Carol Crociante, thank you for your respective advice, editing, and typing assistance.

EXECUTIVE SUMMARY

The purpose of this study by Research for Better Schools (RBS) was to investigate the nature and extent of adult illiteracy and the characteristics of the less literate population in Philadelphia. The research has much practical value. Locally, the data collected will be used by the Mayor's Commission on Literacy to better target literacy services throughout the city. On a national level, the process developed for studying the nature of illiteracy in Philadelphia can be used by policy makers in other cities who similarly wish to improve the delivery of their literacy services.

Methodology

A four-step research plan was developed. First, an advisory committee was organized to provide input throughout the project, particularly in the design and definition stage. Then, census data were analyzed to explore the geographic distribution of reported education levels. Next, 2,197 telephone interviews were conducted to gather some general information and identify subjects for personal interviews. Finally, 607 personal interviews were completed to provide information on background and demographic characteristics of less literates, their skills, and their attitudes towards literacy services. A modified version of the instrument developed by the National Assessment of Educational Progress (NAEP) for their young adult literacy study was utilized. With this instrument, researchers had access to a nationally validated data base. The entire project took a year and a half to complete.

Conclusions

1. The incidence of functional illiteracy may not be as high as has been sometimes reported in the popular press; the data suggest that there is an upper limit on the incidence of functional illiteracy in Philadelphia of less than 12 percent. Another 21 percent, however, are performing at a rather low level -- below the ninth grade functioning. The high unemployment rates and low levels of income of individuals in these two groups confirm that poor basic skills, poverty, and unemployment go hand in hand. Thus, lack of literacy skills probably has affected the ability of close to a third of Philadelphia's citizenry to become productive members of society.

2. For the most part, lower literates tend to be older and belong to a minority group. Most have not completed high school, are unemployed, and earn less than $10,000. Frequently, they suffer from physical problems.

3. Lower literates often have poor opinions of their schooling and of themselves as learners, although they have relatively high aspirations for further education.

4. Lower literates have highly developed coping skills for reducing or circumventing the problems posed by a variety of reading and writing tasks. Many read newspapers, magazines, and even books, although with less frequency and fluency than their more literate counterparts. As a result of these adaptive abilities, they frequently see little reason to upgrade their literacy skills.

5. Lower literates know where to go to seek help with basic skills, but few choose to go. Moreover, many of those who do enroll in an improvement program drop out.

Recommendations

1. A literacy marketing plan needs to be designed to reach those most in need of literacy training. On one level, this means advertising in places where persons in need are wont to go. On another level, marketing means doing a better job of communicating the skills that individuals must have in order to get and keep jobs. If persons with low literacy skills continue to feel that they have few or no literacy needs, there will be no reason for them to attempt to improve themselves.

2. Service providers need to develop guidelines for efficiently allocating their resources to the different individuals who need their services -- the old, immigrants, at-risk youth -- in ways that are most productive for society at large.

3. Literacy service providers need to consider redesigning their curricula and activities in order to reflect both the higher level skills of the client base and the technological demands of our society.

4. Literacy programs, both in centers or at the work site, need to offer distinct rewards in order to heighten motivation. These rewards could include diplomas, job promotion, and higher salaries. Many of Philadelphia's businesses and service providers have developed successful innovative practices; these should be identified and made available to serve as models.

5. Evaluation of the effectiveness of different types of literacy programs, both at the work site and in other environments, should be carried out in order to more clearly identify what is and is not working.

6. Data from this study should be used in conjunction with an assessment of available local services to determine what specific efforts

need expansion and what funds are needed. A multi-year, multi-stage plan for securing funds and improving programs should be developed.

7. Efforts to improve educational opportunities for minorities and immigrants need to receive continued attention and funding.

8. A continued, forceful preventative effort must be sustained in the public schools to assist at-risk youth, reduce dropouts, avoid social promotion, and foster the desire for continued education. In Philadelphia, this means supporting preventative programs such as pre-school care, the Franklin Institute's "Museum to Go," JobSearch, the Philadelphia High School Academies, the Motivation Program, and after-school tutoring.

9. This study should be replicated in other cities across the country, both to provide city-specific data on literacy for policy makers and literacy service providers, and also to develop a national perspective on illiteracy in American cities.

TABLE OF CONTENTS

	Page
Acknowledgments	iii
Executive Summary	v
Methodology	v
Conclusions	vi
Recommendations	vii
1. Introduction	1
Background of the Study	1
Defining and Measuring Literacy	5
A Working Definition of Literacy	10
2. Methodology	13
Research Design	13
Data Aggregation and Analysis	33
3. Literacy Profile: Findings	35
The Sample	35
Seven Levels of Literacy Skills	37
Summary	47
4. Characteristics of the Less Literate: Findings	51
Three Levels of Literacy Skills	51
Demographics	54
Educational Perceptions and Aspirations	61
Jobs and Income	64
Literacy-Related Behavior and Needs	67
Experiences with Literacy Services	76
5. Methodology for Studying Literacy: Findings	81
Defining Literacy	81
Instrumentation	82
Sampling Issues and Interview Techniques	85
Advisory Committees	87
6. Conclusions, Implications, and Recommendations	89
Conclusions	89
Implications	94
Recommendations	96

Page

Bibliography 99

Appendix: List of Advisory Committee Members 103

LIST OF TABLES

		Page
Methodology		
1	Study Plan	14
2	Attributes of Selected Zip Codes	20
3	Seven Levels of Literacy	27
4	Completed Interviews	30
Literacy Profile		
5	Interview Sample Statistics	36
6	Seven Levels of Literacy	38
7	Age	39
8	Sex	40
9	Race	40
10	Income	41
11	Education Level	41
12	Place of Birth	42
13	Profession	42
Characteristics of the Less Literate		
14	Three Levels of Literacy	51
15	Age	55
16	Sex	55
17	Race	56
18	Place of Birth	57
19	Education Level	58
20	Language Spoken At Home	59
21	Physical Problems	60
22	Perception of Schooling	61
23	Perception of Self as Learner	62
24	Educational Aspirations	63
25	Income	64
26	Employment	65
27	Job Aspirations	66
28	Hours Spent Reading Newspapers Weekly	67
29	Hours Spent Reading Magazines Weekly	68
30	Hours Spent Reading Books Monthly	68
31	Newspapers Read	69
32	Parts of Newspapers Read	70
33	Free Time Spent Writing	71
34	Household Responsibilities	72
35	Public Transportation Used	73
36	Literacy Needs	74
37	Skills Needing A Lot of Improvement	75
38	Familiarity with Literacy Services	76
39	Know of Mayor's Commission on Literacy	77
40	Know of Center for Literacy	78
41	Know of Lutheran Settlement House	78
42	Know of YMCA Programs for Reading	78
43	Know of Project PLUS	79
44	Literacy Experiences	80
45	Reasons for Not Seeking Help When Needed	80

LIST OF FIGURES

		Page
1.	Adults with Less Than Ninth Grade Education	18
2.	Adults with Less Than Twelfth Grade Education	19
3.	Seven Level Literacy Profile	49

1. INTRODUCTION

This document represents the final report of the Research for Better Schools (RBS) study of literacy in Philadelphia. There were three purposes to the study:

- to profile adult literacy skills in Philadelphia
- to study the characteristics of low literates in order to assist literacy service providers in efficiently and effectively targeting their efforts
- to advance the state of knowledge regarding literacy assessment methodology in order to facilitate similar studies in other cities.

The study report is divided into six sections. This introduction describes the background and purpose of the study and the relevant research concerning key issues in defining and measuring literacy. The next section describes the approach, the instrumentation, and the data analysis. Then, three sections present the findings related to the three main study purposes. Section three presents a literacy profile of Philadelphia; section four, the findings about the characteristics of less literates; and section five, the findings pertaining to methodology for studying literacy. The study conclusions, implications, and recommendations are found in section six. An appendix contains the list of advisory group members.

Background of the Study

> The problems of those lacking even the most basic literacy skills -- those often labeled as "illiterates" -- will continue to merit national attention. But the literacy needs of those above this bottom level are a problem of far greater dimension, one that will require federal, state, local, and private assistance to overcome.
>
> Richard Venezky, Carl Kaestle, and Andrew Sum, The Subtle Danger, p.8.

Illiteracy has been called one of America's national tragedies. In our highly technical society, much of the past research has suggested that over 20 million adults may be defined as "functionally illiterate", meaning:

- They cannot "use printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential" (Kirsch & Jungeblut, 1986, p. I-8).
- They attended less than nine years of school (NCES, 1984).
- They are unable to "employ communication skills, computation skills, problem solving and interpersonal relations skills in a variety of adult-related situations" (Adult Performance Level Project, 1977, p.12).
- They are unable to fill out common application forms (Harris & Associates, Inc., 1970).
- They are suffering "from serious deficiencies in functional reading ability" (Harris & Associates, Inc., 1971, p.57).

In Philadelphia, the estimates of the extent of illiteracy have been alarming. At times, 30 to 40 percent of Philadelphia's adults have been characterized as functionally illiterate -- lacking basic reading, language, and other job-related skills. On a human level, such illiteracy leads to individual hardship -- the inability to help one's children do their homework, decipher the directions on a medicine label, fill out a job application, or pass a written driver's test. On a broader scale, illiteracy undermines the social fabric of the city, running hand in hand with dependency, deprivation, and delinquency. For example:

- Using 1981 Bureau of the Census data, of those persons 22 years of age and older who had completed five years or less of school, 35.2 percent had incomes below the poverty level (NCES,1984).
- According to the APL study (Adult Performance Level Project, 1979), 36 percent of those unemployed were estimated to be functionally incompetent, compared to 15 percent of the employed.

- Of the 425,678 inmates in state and federal prisons in 1983, 61 percent had less than a high school education, and 26 percent had eight years of education or less (Gold, 1984).

Philadelphia has many reputable agencies providing city-wide literacy services, such as the Lutheran Settlement House and the Center for Literacy. Yet, primarily working on a one-to-one basis, these agencies have been estimated to be serving perhaps as little as four percent of the illiterate population (House of Representatives Subcommittee on Post-Secondary Education, 1982). Of the remaining 96 percent, little is known. It is not known, for example:

- Who these people are: their sex, age, level of education, verbal fluency, marital status, nationality, geographical mobility, household composition.
- How "illiterate" these people are: Totally? Functionally? What skills do they have? Can they read labels? Write checks? Complete applications?
- How these people are distributed geographically?
- Why they do not attend any of the literacy programs, or, if they did, why they dropped out?
- What, if anything, would attract them to a literacy center?

The Mayor's Commission on Literacy (MCL), established in 1983, has joined forces with and provided leadership and direction to established local literacy service providers. The Commission's major goal has been to "mount a large-scale literacy effort throughout the city, which would significantly increase the number of individuals receiving services through volunteer tutor involvement" (Mattleman, 1984, p.5). Activities have included:

- promotion of literacy needs and services
- tutor training

- development of a resource directory of service providers
- establishment of an information, referral, and technical assistance network for existing programs and newly emerging centers
- opening new centers
- establishment of a prison literacy program
- data collection.

The MCL has worked diligently to develop an accurate city-wide literacy data base, creating a client referral system, identifying the literacy service providers in the city and their respective services, and identifying and tracking literacy center clientele. But, the adults and youth who attend or who have attended literacy programs are thought to comprise only a small percentage of Philadelphia's illiterates -- approximately 20,800 out of a possible pool of several hundred thousand. To reach the remaining persons in need, MCL felt they needed newer, more specific and more accurate data about Philadelphia's less literate population than they had on hand. For example:

- Many of the literacy estimates have been extrapolated from census statistics on high school graduation. Yet neither high school completion nor number of years of school attendance have been demonstrated to accurately describe an individual's actual level of literacy.
- The APL data (1977) and Harris poll functional literacy data (1971) are respectively 11 years and 17 years old and appear to be no longer accurate.
- Most of the available data are not specific to Philadelphia -- its ethnic groups, social structure or demographic patterns.
- The data do not report anything about the personal characteristics, skills, and attitudes of Philadelphia's less literate population that would enable service providers to more efficiently target their resources. For example, service providers have suggested that most "illiterates" have some basic reading skills, and that efforts

should be targeted at those reading above the fifth grade level. Yet there are no hard data to support this argument.

- The data only include those who report on themselves. Many of the people the MCL might wish to reach may never have completed any census forms or tests and would not be included in the statistics.

In essence, the MCL had wanted to obtain a clearer picture of the state of literacy in Philadelphia, the characteristics of the less literate population, and strategies for reaching those in need of literacy services. The present study sought to provide the MCL with these data. In addition, the study sought to develop research tools and a knowledge base that could be applied in other cities, both to help examine local conditions and to provide comparative information on literacy conditions.

Defining and Measuring Literacy

Defining and measuring literacy today tends to be at best a relativistic and emotionally charged process. Ronald Cervero suggested that to attempt to arrive at a common definition of literacy could be viewed as "a clash of competing value positions, ideologies, and power structures" (Cervero, 1985, p.5). Yet such relativism was not always the case. Kirsch and Jungeblut (1986) described four historical stages in the development and measurement of literacy. In the first stage, literacy was defined by the ability to sign one's name or report one's own ability to read or write. This was the simplest measure of literacy, popular in the United States before 1900. Measurement tools consisted of legal documents and self-reporting on census questionnaires. With respect to the census, in 1870, 20 percent of the population reported themselves to be illiterate, whereas in 1979, less than one percent did (Stedman & Kaestle, 1987, p.11). The validity of literacy data based on legal documents was limited to those

individuals who had left written records. Likewise the census literacy data were limited to those individuals who reported on themselves and also were subject to the limitations of self-report.

With the advent of the industrial revolution and compulsory schooling, a second stage with more sophisticated measurement tools was entered. Researchers equated literacy with years of schooling; they examined grade level reading scores; and they developed standardized tests to measure achievement. Literacy in this context became synonymous with the intellectual, school-related skills of reading and writing, and researchers attempted to measure literacy across groups and at different times in history.

Yet, the number of years a person spends in school does not necessarily measure ability to perform specific reading or writing tasks. Further, interpreting school achievement test trends over time without assurance that the test groups are comparable on achievement-related variables and representative of the general population can lead to faulty conclusions about levels of literacy. Finally, critics have charged that the school-based definition of literacy does not say anything about an individual's capacity to "use printed and written information to function in society" (Kirsch and Jungeblut, 1986). Warned an early UNESCO document, "The skills of reading, writing, and counting are not. . . an end in themselves. Rather, they are the essential means to the achievement of a fuller and more creative life" (UNESCO, 1947, p.115).

The concept of literacy in the third stage, thus, began to take on a different cast in the eyes of the researchers, that of the ability to perform a specified set of functions or tasks. David Harmon suggested that

the concept of "functional literacy" was popularized during World War II, when the U.S. Army defined illiterates as "persons who were incapable of understanding the kinds of written instructions that are needed for carrying out basic military functions or tasks" (Levine, 1982, p.250). Tom Sticht, in research for the military, stressed the relationship between functional literacy and "job-related literacy demands" (Sticht, 1975, p.427). This relationship is particularly important as today's jobs may require an ever-increasing level of "functional literacy" that may be beyond the current performance level of many of our adults.

Stedman and Kaestle distinguished between what they called "crude literacy", literacy related to the school curriculum, and "functional literacy", literacy related to the world outside. (Stedman & Kaestle, 1986, pp.2-3). Crude literacy is "the ability to pronounce and understand written text using vocabulary already known to the student" (p.3). The usual ways of measuring crude literacy are standardized tests on "then and now" studies. Measures of functional literacy include tests of educational attainment, tests of applied reading skills, comparisons of reading levels of a particular population to frequently encountered reading materials and job literacy measures (p.29). New tests are more functionally-oriented. For example, those used in the 1970 Survival Literacy Study (Harris & Associates, Inc., 1970), the 1971 National Reading Difficulty Index (Harris & Associates, Inc., 1971), the NAEP Mini-Assessment of Functional Literacy (Gadway & Wilson, 1976), the Adult Functional Reading Study (Murphy, 1973, 1975), or the 1975 Adult Performance Level Project (Adult Performance Level Project, 1977) were designed not only to measure reading and writing,

but a variety of computational, problem solving, and interpersonal skills within a functional context.

Critics, however, argue that a simple functional definition of literacy still places too much emphasis on reading as a measurement of performance. Wrote Levine:

> Although the ability to read is a desirable asset in some situations, the exercise of skills like reading labels and instructions for filling out forms has a limited capacity to reduce social deprivation or directly to remedy disadvantages such as unemployment, low pay, or inadequate housing (Levine, 1982, p.261).

Furthermore, the line between functional literacy and illiteracy is somewhat arbitrary (Stedman & Kaestle, 1987). Who is to say where it should be drawn? Critics also question the choice of items on any assessment instrument (Fisher, 1978). Some contend that job literacy tasks differ from the tasks tested, that an individual may perform work competently and yet not understand train schedules (Stedman & Kaestle, 1987, p.30). Others argue that the tests are biased in favor of one group or another. The APL test, it is claimed, includes items primarily related to "climbing the ladder of success" rather than simply "coping", and favors those with advanced education and job status (Stedman & Kaestle, 1987, p.28). Fisher noted that the concept of functional literacy is only "relative to a given subpopulation. The literacy demands on one subpopulation may include only some of the demands on other subpopulations" (Fisher, 1978, p.57).

Another factor to be considered is the way individuals deal with solving real-life problems. Often they rely on the environment for suggestions or on help from other individuals. Tests such as the Harris survey or the APL test do not allow for these extraneous cues (Ackland, 1976).

Even Sticht notes with reference to his own research that there is a weak correlation between reading levels and the job proficiency of workers (Sticht et al., 1972).

A final way of defining literacy (the fourth stage) is within a social context. The roots of this definition belong in the domain of global education. During the many years UNESCO staff have attempted to deal with issues of world literacy, it has become very clear that literacy has different meanings in different cultures. Gray, in a 1956 survey of reading and writing for UNESCO that was to shape the organization's policies for many years, defined a person as functionally literate "when he has acquired the knowledge and skills in reading and writing which enable him to engage in all those activities in which literacy is normally assumed in his culture group" (Levine, 1982, p.253). In this case, literacy becomes relative, depending both on the demands of a particular society and on the techniques developed by individuals for accomplishing desired or required transactions.

Thirty years later, Kirsch and Jungeblut (1986) defined literacy in a similar fashion, taking into account the social context. For them, literacy meant "using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential" (p.I-8). Kirsch and Jungeblut did not draw an artificial line, separating the "literate" from the "illiterate". Rather, they analyzed skills in terms of "levels of literacy", scaling the tasks they asked interviewees to perform, and looking at the percentages and characteristics of the population that could perform the different tasks. The issue, then, became not "illiteracy", but "how literate". In point of fact, the number of individuals who could not read or write at all was found to be very small, about two percent.

These NAEP researchers also defined three different types of literacy (reading proficiency, document utilization, and quantitative literacy) and developed different literacy scales for each type. In this way, they sought to recognize the multidimensional character of literacy. They also accepted the fact that individual performances could vary, depending on the type of literacy being measured. As with other surveys of the type, criticism generally focused on task selection, the assignment of difficulty levels to particular tasks, and the use of items from the NAEP high school student tests to measure adult grade level reading performance. Overall, however, the NAEP study was generally well received.

In sum, over the years, literacy has become a culturally specific concept, one that touches on the emotions and the values of both individuals and the society as a whole. Researchers who attempt any measurements of literacy, then, are bound to encounter a variety of definitional and methodological criticisms, and will have to consider the audience for whom they are writing. As Ronald Cervero notes in his introduction to the National Adult Literacy Project, "The question, then, is not whether there is a need for a common definition of literacy, but rather, whose needs will be served" (Cervero, 1985, p.5).

A Working Definition of Literacy

In developing a definition as part of the design for this study, RBS researchers accepted three crucial conditions. First, it was assumed that to some extent literacy is "in the eye of the beholder" and must be considered within a personal and a societal context. Second it was desired to relate the Philadelphia data to other literacy data bases such as the NAEP.

Finally, since a key purpose of the study was to assist service providers in efficiently and effectively targeting their efforts, a useful definition of literacy had to consider that these service providers would constitute a primary audience for the research.

In the initial stages of the study, meetings were held with an advisory committee of selected service providers and members of Philadelphia's Mayor's Commission on Literacy. (See Appendix for listing.) These advisors made clear that they did not see the definitional issue in terms of "illiteracy," but in terms of skills needed. As the Executive Director of the MCL commented, "We are concerned with adults lacking basic skills."

Concurrent with the advisory committee meetings, RBS staff conducted a thorough review of the research related to defining and measuring literacy. Based on these meetings and research, RBS staff decided not to "reinvent the wheel", and to adopt the NAEP definition of literacy. Thus, literacy for the Philadelphia study also is defined as "using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential" (Kirsch & Jungblut, 1986, p.3).

2. METHODOLOGY

This section of the report presents details on the methodology utilized in carrying out the study. Included in this section are the research design consisting of four phases -- a description of the collaboration with literacy groups involved in planning the study, analysis of the census data, the telephone outreach survey, and personal interviews -- and the procedures used to aggregate and analyze the data.

Research Design

The three principal study questions are listed below:

- What is the profile of adult literacy skills?
- What are the characteristics of less literate adults?
- What are the major issues in assessing adult literacy?

In order to address these questions, a study plan incorporating a research design needed to be developed. This plan consisted of four phases, as reflected in Table 1. It incorporated consultation and collaboration with local and national literacy groups, analysis of Census data, a telephone outreach survey, and personal interviews. The first phase sought to provide an opportunity for literacy service providers to collaborate with researchers in producing a working definition for the concept of "literacy" and in constructing the telephone survey and personal interview instrumentation. The second and third phases were chiefly to provide information which could be used for identifying individuals who would be selected for personal interviews. The fourth phase was the primary source of data collection for addressing the principal study questions. Each of the study phases is described below in greater detail.

Table 1

Study Plan

Phase	Activity	Purpose
I	Confer with Mayor's Commission on Literacy and National Urban Literacy Task Force	• Define Literacy • Design Instruments
II	Analyze Census Data	• Explore geographic distribution of education levels
III	Design and Conduct Telephone Survey (sample = 2,197)	• Gather general information • Identify subjects for personal interviews (sample = 844)
IV	Design and Conduct Personal Interviews (sample = 607)	• Gather information on background and demographic characteristics of less literates • Gather information about attitudes of less literates towards literacy centers and services • Assess performance on literacy tasks

Phase I - Collaboration with Literacy Groups

In the initial stages of this study, RBS researchers talked with literacy experts across the country about alternative definitions of "literacy" and problems in measuring adult literacy. As this study was getting under way, the National Conference on Urban Literacy was being formed, and RBS researchers met and discussed study issues with members of this organization. At the same time, meetings were held both with local members of the Mayor's Commission on Literacy and representative service providers in Philadelphia. As a result of these meetings, a general working definition of literacy was established and study procedures were designed that would reflect the concerns of these groups.

In addition to these discussions, an advisory committee was created for the study. This committee consisted of the Executive Director of the Mayor's Commission on Literacy, selected members of the Commission, and several major Philadelphia literacy service providers. The group met several times in the early stages of the study to help with design of the instrumentation and to offer procedural suggestions and advice. Toward the end of the study this group met again to suggest additional analyses that would be of interest to service providers and to discuss various interpretations of the results.

Based on these meetings, it was clear that the Mayor's Commission on Literacy and the literacy service providers in Philadelphia viewed the issue not in terms of "illiteracy," but rather in terms of levels of literacy and the need for a continuum of instruction related to an individual's literacy skills. The definition of literacy arrived at in collaboration with these groups was that adopted as part of the recent NAEP study: literacy is

"using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential" (Kirsch & Jungeblut, 1986, p. 3).

While conceptually this represented a comprehensive definition of literacy, it needed further operational specification in order to select or construct instrumentation to assess literacy. Since the NAEP findings were to be used for comparison purposes, the NAEP operational definition was adopted. NAEP utilized a three-component approach to assessing levels of literacy which incorporates measures of reading proficiency, quantitative literacy, and document utilization. A more complete description of the instrumentation constructed and the scaling utilized is provided in the information on Phase IV below.

Phase II - Use of Census Data

Since estimates of the number of persons with low literacy skills in Philadelphia have varied widely, and since reaching these persons can be difficult, a major concern in conducting this study was securing sufficient numbers of low literates to permit useful analyses. The primary purpose of Phase II was to use the 1980 Census data to identify zip codes with low educational attainment. These zip code areas could be expected to yield more low literate individuals for the telephone interview sample and, in turn, the personal interview sample. At the same time, the Census data would provide a demographic profile of the city against which the sample characteristics could be compared.

Data on the 1980 census (supplemented by 1983 update information) were secured from the Census Bureau and related to the 47 zip codes represented in the city of Philadelphia. The following characteristics were available

by zip code: (1) the percentage of adults 18 and over with less than a high school education, (2) the percentage of adults 25 and over with an eighth-grade education or less, (3) the number of adults 18 or over, (4) the percentage of adults in each ethnic category, (5) the percentage of households with telephones, and (6) the median family income. The two educational attainment variables were selected as the closest indicators of level of basic skills functioning. Figures 1 and 2 illustrate these data.

The Philadelphia zip codes were ranked by level of educational attainment based on a combination of the two variables. Telephone exchanges were then carefully matched to zip code areas. Oversampling of potential lower literates was accomplished in the telephone survey by scheduling more calls in those areas ranking highest in percentages of lower educated adults.

Characteristics of the 21 zip code areas identified for oversampling are shown in Table 2. Of particular note is the percentage of residents with telephones. In all but three of the oversampled zip codes at least 80 percent of the households have telephones. Two-thirds of these zip code areas have 90 percent or more residents with phones. These high percentages were, of course, an important consideration with respect to the telephone methodology. Furthermore, these census data also were useful for interpreting results of the telephone and personal interview findings. Demographic characteristics, such as age, race, income level, sex, geographic location, education, profession, and others were compared with the demographics of study participants.

Figure 1

Adults With Less Than Ninth Grade Education

LEGEND	
LT 10%	PERCENT OF POPULATION
10 - 20%	25+ YEARS OF AGE WITH
20 - 30%	0 - 8 YEARS OF EDUCATION
30 - 40%	18
GT 40%	
NON-RES	DATE: 87/01/21. TIME: 10.54.20.

Figure 2

Adults With Less Than Twelfth Grade Education

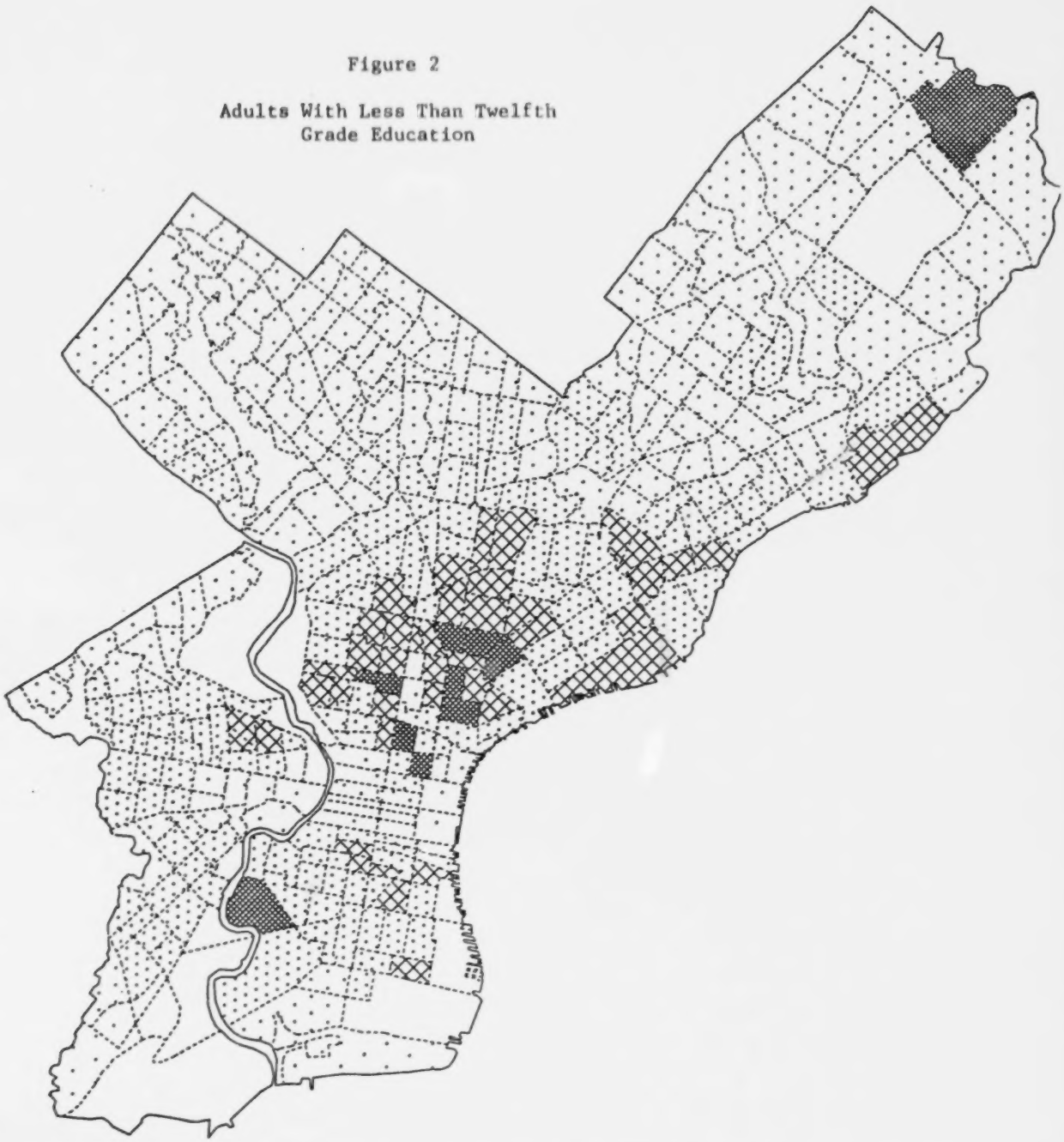

Table 2

Attributes of Selected Zip Codes

	% 18+ < High School	% 25+ 0-8 Grades	Number 18+	% Black	% Spanish	% Telephones	Median Family Income
Near Northeast							
19135	44	22	25,607	1	1	98	$19,612
19136	41	20	31,048	6	1	98	$20,631
Olney/Logan							
19120	43	23	47,368	6	5	97	$18,112
Kensington							
19125	63	32	18,630	0	2	90	$14,403
19137	59	33	6,671	0	0	97	$16,770
19134	59	31	44,495	1	2	92	$15,135
19124	47	24	47,357	6	2	96	$17,852
North Phila.							
19133	68	42	21,750	48	43	75	$ 7,670
19121	64	35	38,016	98	1	86	$ 7,226
19132	60	31	39,482	97	0	90	$10,414
19123	59	35	8,893	72	8	79	$ 6,660
19140	56	30	46,286	55	20	86	$11,582
19122	54	38	15,302	47	32	77	$ 8,421
Center City							
19130	40	23	18,312	28	13	89	$16,391
Northwest							
19127	59	30	4,623	3	0	94	$16,222
South Phila.							
19148	56	32	42,558	6	2	95	$15,107
19146	55	30	31,374	73	1	89	$10,996
19145	49	26	42,221	27	1	95	$15,196
19147	49	31	28,921	24	3	92	$13,189
West Phila.							
19139	47	23	38,383	91	1	92	$11,500
Southwest							
19142	49	25	22,658	12	1	95	$17,127

Phase III - Telephone Outreach Survey

The primary purpose of the telephone survey was to pre-qualify individuals for selection into the personal interview phase of the study (based on a spelling test and reported educational attainment) and to collect sufficient identification and demographic information to facilitate actual scheduling and conducting of the personal interviews.

It was estimated that resources would allow the inclusion of about 600 respondents in the personal interview portion (Phase IV) of the study. Assuming a 70 percent capture rate, this would require a pool of approximately 850 pre-qualified people in order to complete 600 interviews. The study budget allowed the telephone survey to include approximately 2,200 respondents, from which 850 could be drawn. The instrumentation, sampling, and data collection procedures associated with the telephone interview phase of the study are described below.

Instrumentation. A survey questionnaire and literacy-related performance measure were prepared for use in the telephone survey. Both were constructed in consultation with the Literacy Advisory Committee. Survey questions of primary interest to the research study were those which asked for identification information (e.g., name, address, zip code) and demographic information (e.g., age, sex, race, birthdate, place of birth, and years of schooling).

The performance measure was intended to provide a more direct measure of the literacy level of each of the individuals reached via the telephone survey. It consisted of an oral spelling test with words ranging up to projected sixth grade level of difficulty:

Mysterious
Musician
Explosion
Harvest
Count
Angry
Drive

The spelling test was administered with the most difficult word being given first, followed by each word in order of difficulty from highest to lowest, until a word was spelled correctly. At that point, the test was stopped and the individual was given full credit for the remaining less difficult words. Scoring was done by bi-graphs.* One point was awarded for each correct bi-graph achieved by the respondent. An individual spelling "mysterious" correctly would thus achieve a perfect score of 56. For ease of interpretation and analysis, these bi-graph scores were converted to percentages.

Based on years of schooling and the oral spelling test scores as the primary literacy correlates, individuals from the telephone survey who were willing to participate could be pre-qualified for selection into the personal interview phase of the study.

Sampling. The City of Philadelphia encompasses 47 zip code areas, with adult populations, ranging from 2,208 to 59,736 according to the 1980 Census. Of the 47 zip codes, 21 were identified as areas more likely to include potentially low literate adults. This was done by using two measures of educational attainment available from the Census data at the zip code level: number of residents aged 25 or older with less than eight years of formal education, and number of residents aged 18 and older with less than a high school education. The percentage of persons in each category

---

*A bi-graph is any combination of initial and final spaces and letters taken in pairs. Thus, the word "Drive" has a total of 6 bi-graphs as follows: D r i v e.

was computed for each zip code. The zip codes were then rank-ordered by level of educational attainment. Nineteen zip codes were found to be ranked lowest on both educational attainment variables and were targeted for oversampling. Two other zip codes had the next lowest combined rankings and were also included, resulting in a total of 21 oversampled zip codes.

The sample selected for the telephone survey was a stratified random sample with oversampling. Sample sizes were determined for each zip code area based on the proportion of the population living in each zip code, except that larger than proportional sample sizes were allocated to the 21 zip code areas with high projected low literate populations. In this way the 2,200 budgeted telephone interviews were allocated among the zip code areas. These zip code areas were matched with their respective telephone exchanges. A random digit generator was used to generate the four digit suffixes within each exchange in the sample, thus producing the telephone numbers to be called for interviews. While not all identified telephone exchanges necessarily covered only one zip code, the method employed was the most practical means of identifying targeted areas of the city of Philadelphia.

Data Collection. In all, 2,197 telephone surveys were conducted by trained telephone interviewers under a subcontract with the Drexel University Survey Research Center. The interviewers all had prior interview work experience. Furthermore, many of the interviewers had undergraduate or graduate school training in research methodology. The 10 principal interviewers varied in terms of age, gender, and ethnic-racial backgrounds. As a result of this heterogenous mix, potential interviewer-respondent interaction biases could be randomized to reduce their effects.

Prior to the fieldwork, the interviewers were instructed in the procedures associated with all survey items. Pre-testing of the survey by all interviewers was undertaken so that the interviewers had personal experience with the survey instrument. Approximately 75 pre-tests were conducted on the drawn sample in order to test the survey. These completed surveys were ultimately used in the final data analysis since no changes in the survey or interviewing procedure resulted from the pre-test.

During the course of the interviews all interviewers were monitored by the project manager and the principal investigator. In order to control for any potential bias due to the time of contact, the telephone calls were varied in terms of both the time of day and day of the week in which interviewing took place. As a result, interviewing took place in the morning, afternoon, and evening and on both weekdays and weekends. However, most interviewing took place in the evening between four and nine o'clock.

A special selection procedure was implemented in order to increase the randomization of respondents. This selection procedure was designed to include persons other than the one initially answering the telephone. Interviewers read the following statement:

> Because this is a scientific sample, we need to select a certain member of the family to interview. I need to speak to the/a (ask for the next appropriate person) who is presently at your household.

(man youngest man youngest woman woman oldest man oldest woman)

These telephone survey procedures provided a sufficiently large and diverse sample for the next phase. The subsequent personal interviews using the pool of 2,197 are described in the next section.

Phase IV - Personal Interviews

The personal interview phase of the study was intended to provide the main source of data to address the study questions. A special interview form was developed which included questions on background, habits and attitudes, as well as a performance measure of literacy skills. A sample of adult Philadelphians, selected from those pre-qualified by telephone interview, was administered the personal interviews. A more detailed description of instrumentation, sample selection, and data collection for this phase of the study is provided below.

Instrumentation. The survey instrument for the personal interviews, like the telephone interview, was prepared with input from members of the Literacy Advisory Committee. It was divided into two parts. Part 1, a questionnaire, probed the respondents' backgrounds as well as their attitudes toward and use of basic reading, writing, and mathematics skills. Part 2, a workbook, tested their mastery of these skills using items from the NAEP literacy study. The test was designed to reflect the definition of literacy as used in the study by incorporating three subtests: reading proficiency, quantitative literacy, and document utilization. Each subtest yielded a score which was interpreted as a level of literacy. These levels were adapted from the "levels of proficiency" defined in the NAEP study. The differences between the approach used by RBS and that used in the NAEP study are several. The five "levels of proficiency" defined by the NAEP study (Rudimentary, Basic, Intermediate, Adept, Advanced) were interpreted by RBS as representing mid-points in 50-point score intervals. RBS also added an interval below the Rudimentary and one above the Advanced due to

the distribution of scores obtained by the sample. The RBS levels of literacy as defined in the present study are presented in Table 3. Using these seven intervals, representing levels of literacy, individuals could be tested and grouped in accordance with their skills in each of the literacy areas covered by the subtests or a combination of them.

Sample Selection. A total of 844 cases were selected for personal interviews, including 341 of the potentially less literates and 503 from the more literate group. The less literate group members were defined as those persons without a high school diploma and/or with a score of 69 percent or less on the telephone-administered spelling test. All persons meeting these criteria in the pool of 2,197 from the telephone interviews were selected for personal interview in order to include as many low literate persons as possible. The other 503 persons were selected randomly from the remaining 1,856 cases.

The field completion goal was 600 interviews, 250 from the low literate group and 350 from the random group. Within the low group, those with both low educational attainment and low spelling scores were targeted for special effort; however, interviewers were never aware of the classification of respondents by test score. After all problems with the sample were eliminated (described in more detail below), a total of 740 cases were available to draw on. Interviews were carried out during the months of June, July, August, and part of September, 1987. At the end of that time period, a total of 607 interviews had been completed. Of those 607 cases, 251 were in the low literate group.

Data Collection. The Institute for Survey Research (ISR) of Temple University was engaged by RBS to carry out the personal interviewing under a

Table 3

Seven Levels of Literacy

I. Below Rudimentary (Below 125). A literacy performance level that suggests inability to carry out even simple and discrete reading tasks.

II. Rudimentary (125-174). Readers who have acquired rudimentary reading skills and strategies can follow brief written directions. They can also select words, phrases, or sentences to describe a simple picture and can interpret simple written clues to identify a common object. Performance at this level suggests the ability to carry out simple, discrete reading tasks.

III. Basic (175-224). Readers who have learned basic comprehension skills and strategies can locate and identify facts from simple informational paragraphs, stories, and news articles. In addition, they can combine ideas and make inferences based on short, uncomplicated passages. Performance at this level suggests the ability to understand specific or sequentially related information.

IV. Intermediate (225-274). Readers with the ability to use intermediate skills and strategies can search for, locate, and organize the information they find in relatively lengthy passages and can recognize paraphrases of what they have read. They can also make inferences and reach generalizations about main ideas and author's purpose from passages dealing with literature, science, and social studies. Performance at this level suggests the ability to search for specific information, interrelate ideas, and make generalizations.

V. Adept (275-324). Readers with adept reading comprehension skills and strategies can understand complicated literacy and informational passages, including material about topics they study at school. They can also analyze and integrate less familiar material and provide reactions to and explanations of the text as a whole. Performance at this level suggests the ability to find, understand, summarize, and explain relatively complicated information.

VI. Advanced (325-374). Readers who use advanced reading skills and strategies can extend and restructure the ideas presented in specialized and complex texts. Examples include scientific materials, literary essays, historical documents, and materials similar to those found in professional and technical working environments. They are also able to understand the links between ideas even when those links are not explicitly stated and to make appropriate generalizations even when the texts lack clear introductions or explanations. Performance at this level suggests the ability to synthesize and learn from specialized reading materials.

VII. Above Advanced (Above 374). A literacy performance level characterized by the ability to synthesize and learn from specialized reading materials at a very advanced level.

subcontract. Staffing for the personal interviews was designed to reflect the distribution of the sample and to be ethnically representative of Philadelphia as a whole. Where possible, experienced interviewers were utilized. In fact, one of the interviewers had participated in the NAEP young adult literacy study.

Three comprehensive two-day training conferences were held to orient and prepare the interviewers for their role in the study. The primary conference was attended by 42 interviewers. The second and third were attended by another 11 interviewers. Training was conducted by the interview coordinator and field administrator. RBS staff as well as the field coordinator of the Mayor's Commission on Literacy also participated in the conferences.

Prior to the conferences, all interviewers were sent a home-study package, which included a study-specific Interviewer's Instruction Manual, a questionnaire, and a workbook. Additional training materials were provided at the conferences. A take-home quiz was distributed at the end of the first day and collected at the start of the second day. It was graded and returned to the interviewers before they left the conference. At the conclusion of each conference, interviewers were instructed to complete a practice interview and return it for evaluation prior to receiving an assignment.

To carry out their assignments, interviewers were provided with the following materials:

- Interviewer's Instruction Manual. This manual was written specifically for this study. It contained a thorough explanation of interviewing techniques and procedures, administrative procedures, and all study materials, as well as question-by-question instructions.

- Identification Card. Interviewers were instructed to carry the card with them at all times to be shown when calling on respondents.

- Introductory Letter. Interviewers were supplied with one copy of the letter enclosed in a protective plastic casing to show respondents and additional copies to leave with respondents.

- Request for Appointment Slips. These were to be used if the respondent was not at home when the interviewer visited his/her home.

- Screening/Call Report Forms. These two-sided forms contained the label, questions to establish that the interviewer had located the same person who had been interviewed by telephone, and space to record all attempts to contact the respondent and their results. Interviewers were required to make as many call backs as necessary to obtain a final result.

- Questionnaire. This instrument was to be administered face-to-face by the interviewer to each respondent. It constituted the first part of the interview. The questionnaire contained a Respondent's Participation Form, which was signed by the respondent and used to issue a $10 check to the respondent for participation in the study.

- Interviewer's Workbook Instructions. This blue booklet contained instructions for the interviewer to read to the respondent for the first four items of the Respondent's Workbook. The booklet also contained a scoring guide for these items. If the interviewer observed that the respondent was unable to successfully complete these simple tasks and items, the interviewer was to encourage the respondent to attempt items 6-8 and then to remove the workbook and conclude the interview.

- Respondent's Workbook. This yellow workbook, to be completed by respondents, constituted the second part of the interview. Other than being read instructions for items 1-4, respondents received no assistance from the interviewer in completing the workbook. Some items required reading skills only; others required a combination of reading and mathematics skills. Interviewers observed the respondents and, if it was clear that a respondent was unable to complete one or more items, encouraged him/her to move on to another task. A maximum time of one hour and fifteen minutes was allotted for the workbook. The workbook contained a certification signed by the interviewer that the interview had been conducted according to specifications and that the information contained would be kept confidential.

- Weekly Progress Report. On this ivory form, interviewers reported all work completed each week and the status of all cases still in their possession.

- Postage-paid Mailing Envelopes. Completed cases were mailed to the interview coordinator twice a week in these envelopes.

- Payment Records. Interviewers reported completed interviews on these forms in order to receive payment. Payment was $32 per completed interview. No payment was made for cases that did not result in a completed interview.

Following training, interviewers received their assignments. Cases were assigned by the coordinator in all zip codes. Priority in initial assignments was given to cases from the low literate group, especially those with very low scores or no scores. The interviewers themselves were unaware of the status of the respondents assigned to them. All respondents designated as Spanish-speaking were assigned to two bilingual interviewers, who translated questionnaire items for respondents as necessary. No translation was permitted for the workbook items. Respondents received an incentive payment for completing the interview. Results of the interviewing are shown in Table 4. In all 844 interviews were attempted and 607 were completed, for a rate of 72.0 percent.

Table 4

Completed Interviews

Sample	Attempted	Completed	Percent Completed	Goal	Percent of Goal
Less Literate	341	251	73.6	250	100.4
More Literate	503	356	70.8	350	101.7
Total	844	607	72.0	600	101.2

Every effort was made to handle problems expeditiously as they arose. When interviewers encountered a telephone number at which the designated respondent was unknown or which had been disconnected with no new number available, they made a personal visit to the address. However, in quite a few cases the address was also incorrect. A total of 34 cases were lost because of address problems that could not be resolved; half of these were in the low literate group. An additional 10 cases were lost because ineligible respondents were included in the sample. One duplicate case was also eliminated, and it was impossible to proceed with the one case having the last name only. Thus, address and telephone number problems reduced the sample by 46, from 844 to 798.

For another 74 cases, it was impossible to complete an interview for other reasons beyond the control of the interviewers (e.g., moved with new address unknown, away for duration of study, illness, deceased, or vision problems). These problems further reduced the effective net sample to 724 or 85.8 percent of the original sample.

The effective sample was reduced by refusals (85) and by respondents who were not home after repeated visits by one or more interviewers (32). These two categories reduced the sample to 607, or 72.2 percent of the original sample. Thus, the 607 completions out of the effective net sample of 724 yielded a net completion rate of 83.8 percent. Extensive efforts were made to convert refusals into completed interviews.

All refusals were first sent a letter. The respondent was then recontacted by telephone. If this attempt to schedule an interview was unsuccessful, an additional letter was sent and the case was reassigned to a different interviewer. Three variations of a second refusal letter were

devised to deal with different situations. The first was a general letter, the second was for respondents who had specifically mentioned being too busy as the reason for refusing, and the third was for respondents who were not home on several occasions when an interviewer attempted to recontact them. Finally, the most difficult cases were reassigned to the most productive interviewers. These interviewers were given a bonus for all refusals which were successfully converted, as well as in-person attempts which were unsuccessful.

Still, additional efforts were made to convert refusals in the very low literate group. An incentive of twenty dollars instead of ten was offered to refusals and "no contact" cases. Each very low literate respondent was sent an additional letter offering the increased incentive, and the cases were reassigned to the most persistent and persuasive refusal converters.

For each completed interview, a validation letter was sent to the respondent, along with the incentive check. Validation letters were returned by more than half the respondents. For any interviewer with a mail validation rate below 25 percent, telephone validations were conducted. Altogether 327 cases were validated, for an overall validation rate of 54 percent. Any discrepancies between the questionnaire data and the validation letter data were resolved by the field administrator calling the respondent. In most cases, these discrepancies involved higher educational levels and additional schools being reported in the validation letter. This appears to be due to the question about educational level being asked before the question about schools attended in the letter and in the inverse order in the questionnaire.

RBS also carefully inspected all data upon receipt. Descriptive analyses were conducted, and any errors or missing data were dealt with by retrieving the interview protocols. Additional data obtained in the validation process were included in the final data used for analysis. As a final step, the interviewers were debriefed and questioned concerning biases and problems encountered.

Data Aggregation and Analysis

Data from the telephone and personal interview items were scored so that each respondent could be assigned to one of the seven designated levels of literacy. Scoring was accomplished by equating the number correct on each subtest of the personal interview with the corresponding level of literacy it represented. The three subtest scores were then averaged to arrive at an overall mean (average) literacy level. Frequencies of responses to the questionnaire items were computed for each level of literacy and differences in frequencies were recorded. In this way, the sample could be profiled by level of literacy in terms of all the other characteristics which were measured.

Later, these seven levels of literacy were collapsed into three: a lower literate, intermediate, and high literate. This was done so that practically meaningful comparisons could be made across different groupings. Thus, characteristics of the low literate group could be studied in relation to the other groups, particularly the high literate. The seven group findings are presented in the next section, while the three group comparisons are found in the one after.

3. LITERACY PROFILE: FINDINGS

This section reports the study findings for the sample as a whole. The first part describes the sample demographically and the second provides a profile of the sample organized according to the seven levels of literacy described above in the methodology section -- Below Rudimentary, Rudimentary, Basic, Intermediate, Adept, Advanced, and Above Advanced.

The Sample

Table 5 presents a portrait of the 607 individuals interviewed and presents as a comparison similar figures from the 1980 census of the Philadelphia area. It must be stressed that the sample was not constructed to represent the Philadelphia population statistically, so no claims of representativeness or generalizability of findings are made. The census data are included only as a frame of reference.

Whites made up 55.5 percent of the sample; Blacks, 35.5 percent; Hispanics, 6.1 percent; Asians, 1.7 percent; and the rest, 1.2 percent. Approximately 91 percent were born in the United States and nine percent abroad. Thus racially and in terms of birthplace, the study sample resembles the census portrait of Philadelphia.

In terms of age, 6.6 percent of the study sample were between the ages of 18 and 20. Over a quarter of the sample (28.3 percent) were 21 to 30, and a quarter (25.4 percent) were between the ages of 31 and 40. The other 39.7 percent ranged from 41 to over 61. The 61+ age group contained 16.3 percent of the sample. Similar data for the city of Philadelphia were not available.

Table 5

Interview Sample Statistics

Variable	Sample Number	Sample %	1980 Census %
Sex			
Male	229	37.7	44.6
Female	378	62.3	55.4
Race			
White	325	55.5	58.2
Black	208	35.5	37.8
Hispanic	36	6.1	3.8
Asian	10	1.7	1.0
Other	6	1.0	3.0
(Unknown)	(22)	-	-
Place of Birth			
U.S.	552	90.9	93.6
Foreign	55	9.1	6.4
Age			
18-20	40	6.6	-
21-30	172	28.3	-
31-40	154	25.4	-
41-50	73	12.0	-
51-60	69	11.4	-
61-	99	16.3	-
Education Level			
Less than H.S.	27	4.9	
Some H.S.	158	28.9	34.6
H.S. Graduate	155	28.4	
Some College	115	21.1	54.3
College Graduate	91	16.7	11.1
(Unknown)	(61)	-	-
Income Level			
Less than $10,000	198	35.3	39.4
10-19,999	137	24.5	29.5
20-29,999	111	19.8	18.2
30-49,999	84	15.0	10.6
50,000+	30	5.4	2.3
(Unknown)	(47)	-	-

Approximately two-thirds (66.2 percent) of the individuals in the study sample had graduated from high school, as opposed to 65.4 percent of the 1980 population above the age of 20. Later population data from a 1983 study of educational attainment in the United States suggest that the high school graduation rate has increased substantially since 1980 (U.S. Bureau of the Census, 1987).

In terms of income, slightly fewer participants were at the lowest income level in this study (35.3 percent) than in the 1980 census (39.4 percent). Slightly more were at the highest income level (5.4 percent as opposed to 2.3 percent).

Seven Levels of Literacy Skills

Literacy, as has been indicated, was measured on three scales -- reading proficiency, quantitative literacy, and document utilization. As with the NAEP study, each of these proficiency scales extended along a continuum of 0-500. Seven levels of literacy were designated along this continuum, ranging from "Below Rudimentary" to "Above Advanced," and participants were grouped in these levels on each scale according to their scores on the proficiency test. For the sake of simplicity, a fourth scale was constructed, combining the results from the other three scales into an overall literacy mean score for each individual. Table 6 presents the distribution of scores for each literacy level across all of the scales, including the overall mean scale.

At the same time, using the overall mean score for each individual, each of the seven levels was analyzed according to the characteristics of age, sex, race, income, education level, place of birth, and profession.

Table 6 - Seven Levels of Literacy

Level / Measure	Reading Proficiency			Quantitative Literacy			Document Utilization			Overall Mean		
	Number	(%)	Mean	Number	(%)	Mean	Number	(%)	Mean	Number	(%)	Mean
I. Below Rudimentary	13	(2.1)	0	-	-	-	6	(1.0)	73	23	(3.8)	78
II. Rudimentary	23	(3.8)	166	-	-	-	3	(8.5)	160	34	(5.6)	149
III. Basic	26	(4.3)	203	-	-	-	49	(7.6)	209	12	(2.0)	212
IV. Intermediate	184	(30.3)	246	60	(9.9)	0*	141	(23.2)	250	130	(21.4)	260
V. Adept	303	(49.9)	297	377	(62.1)	292	56	(9.2)	294	257	(42.3)	304
VI. Advanced	58	(9.6)	335	149	(24.5)	346	305	(50.2)	341	144	(23.7)	344
VII. Above Advanced	-	-	-	21	(3.5)	346	47	(7.7)	422	7	(1.2)	377
Total	607	(100.0)	-	607	(100.0)	-	607	(99.4)	-	607	(100.0)	-

*Quantitative Literacy subtest items begin at Level V.

Tables 7 through 13 present these data. Combining the results, one can display profiles that will present a context for the next section's comparison of the lower and the higher literate groups. The next few pages contain these seven group profiles.

Table 7. Sample Profile - Age

Age / Level	N (%) 18-20	N (%) 21-30	N (%) 31-40	N (%) 41-50	N (%) 51-60	N (%) 61-	Total
I	0	2	4	1	4	12	23
	(0.0)	(8.7)	(17.4)	(4.3)	(17.4)	(52.2)	(3.8)
II	2	8	5	5	5	9	34
	(5.9)	(8.7)	(14.7)	(14.7)	(14.7)	(26.5)	(5.6)
III	0	1	2	0	2	7	12
	(0.0)	(8.3)	(16.7)	(0.0)	(16.7)	(58.3)	(2.0)
IV	9	23	33	17	17	31	130
	(6.9)	(17.7)	(25.4)	(13.1)	(13.1)	(23.8)	(21.4)
V	18	83	60	32	29	35	257
	(7.0)	(32.3)	(23.3)	(12.5)	(11.3)	(13.6)	(42.3)
VI	9	52	50	17	11	5	144
	(6.3)	(36.1)	(34.7)	(11.8)	(7.6)	(3.5)	(23.7)
VII	2	3	0	1	1	0	7
	(28.6)	(42.9)	(0.0)	(14.3)	(14.3)	(0.0)	(1.2)
Total	40	172	154	73	69	99	607
	(6.6)	(28.3)	(25.4)	(12.0)	(11.4)	(16.3)	(100)

Table 8. Sample Profile - Sex

Sex / Level	N (%) Male	N (%) Female	Total
I	7 (30.4)	16 (69.6)	23 (3.8)
II	15 (44.1)	19 (55.9)	34 (5.6)
III	4 (33.3)	8 (66.7)	12 (2.0)
IV	37 (28.5)	93 (71.5)	130 (21.4)
V	97 (37.7)	160 (62.3)	257 (42.3)
VI	65 (45.1)	79 (54.9)	144 (23.7)
VII	4 (57.1)	3 (42.9)	7 (1.2)
Total	229 (37.7)	378 (62.3)	607 (100)

Table 9. Sample Profile - Race

Race / Level	N (%) White	N (%) Black	N (%) Hispanic	N (%) Asian	N (%) Other	Total
I	4	16	3	0	0	23
	(17.4)	(69.6)	(13.0)	(0.0)	(0.0)	(3.9)
II	6	21	4	2	0	33
	(18.2)	(63.6)	(12.1)	(6.0)	(0.0)	(5.6)
III	9	2	1	0	0	12
	(75.0)	(16.7)	(8.3)	(0.0)	(0.0)	(2.0)
IV	41	67	15	3	0	126
	(32.5)	(53.2)	(11.9)	(2.4)	(0.0)	(21.5)
V	143	90	9	3	5	250
	(57.2)	(36.0)	(3.6)	(1.2)	(2.0)	(42.7)
VI	117	12	4	2	1	136
	(86.0)	(8.8)	(2.9)	(1.5)	(0.7)	(23.4)
VII	5	0	0	0	0	5
	(100)	(0.0)	(0.0)	(0.0)	(0.0)	(0.9)
Total	325	208	36	10	6	585
	(55.5)	(35.5)	(6.1)	(1.7)	(1.0)	(100)

Table 10. Sample Profile - Income

Income / Level	N (%) Less than 10,000	N (%) 10-19,999	N (%) 20-29,999	N (%) 30-49,999	N (%) 50,000 or more	N (%) DK/NA	Total
I	18	1	2	0	1	1	23
	(78.7)	(4.3)	(8.7)	(0.0)	(4.3)	(4.3)	(3.9)
II	19	9	2	1	0	2	33
	(57.6)	(27.3)	(6.0)	(3.0)	(0.0)	(6.0)	(5.7)
III	6	5	0	0	0	1	12
	(50.0)	(41.7)	(0.0)	(0.0)	(0.0)	(8.3)	(2.1)
IV	64	35	13	5	1	6	124
	(51.6)	(28.2)	(10.5)	(4.0)	(0.8)	(4.8)	(21.4)
V	69	66	57	33	14	10	249
	(27.7)	(26.5)	(22.9)	(13.3)	(5.6)	(4.0)	(42.6)
VI	21	20	35	44	14	3	137
	(15.3)	(14.6)	(25.5)	(32.1)	(10.2)	(2.2)	(23.5)
VII	1	1	2	1	0	0	5
	(20.0)	(20.0)	(40.0)	(20.0)	(0.0)	(0.0)	(0.9)
Total	198	137	111	84	30	23	583
	(33.9)	(23.5)	(19.0)	(14.4)	(5.1)	(3.9)	(100)

Table 11. Sample Profile - Education Level

Educ. / Level	N (%) Less than H.S.	N (%) Some H.S.	N (%) H.S. Graduate	N (%) Some College	N (%) College Graduate	Total
I	11	8	3	0	0	22
	(50.0)	(36.4)	(13.6)	(0.0)	(0.0)	(4.0)
II	4	16	8	0	2	30
	(13.3)	(53.3)	(26.7)	(0.0)	(6.7)	(5.5)
III	1	7	3	1	0	12
	(8.3)	(58.3)	(25.0)	(8.3)	(0.0)	(2.2)
IV	10	65	30	10	5	120
	(8.3)	(54.2)	(25.0)	(8.3)	(4.2)	(22.0)
V	1	51	86	61	29	228
	(0.4)	(22.4)	(37.7)	(26.8)	(12.7)	(41.8)
VI	0	11	24	42	52	129
	(0.0)	(8.5)	(18.6)	(32.6)	(40.3)	(23.6)
VII	0	0	1	1	3	5
	(0.0)	(0.0)	(20.0)	(20.0)	(60.0)	(0.9)
Total	27	158	155	115	91	545
	(4.9)	(28.9)	(28.4)	(21.1)	(16.7)	(100)

Table 12. Sample Profile - Place of Birth

Origin / Level	N (%) U.S. (50 States)	N (%) Puerto Rico	N (%) Foreign Country	N (%) Other U.S. Territory	Total
I	20	3	0	0	23
	(87.0)	(13.0)	(0.0)	(0.0)	(3.8)
II	29	2	3	0	34
	(85.2)	(5.9)	(8.9)	(0.0)	(5.6)
III	7	1	4	0	12
	(58.3)	(8.3)	(33.3)	(0.0)	(2.0)
IV	108	10	12	0	130
	(83.1)	(7.7)	(9.2)	(0.0)	(21.4)
V	243	2	12	0	257
	(94.5)	(0.8)	(4.7)	(0.0)	(42.3)
VI	138	0	6	0	144
	(95.8)	(0.0)	(4.2)	(0.0)	(23.7)
VII	7	0	0	0	7
	(100)	(0.0)	(0.0)	(0.0)	(1.2)
Total	552	18	37	0	607
	(90.9)	(3.0)	(6.1)	(0.0)	(100)

Table 13. Sample Profile - Profession

Prof. / Level	N (%) Prof./Mgr. Cler./Sales	N (%) Crafts/Foreman Laborer/Serv.	N (%) Home-maker	N (%) Unem-ployed	N (%) Total
I	1 (4.3)	3 (13.0)	3 (13.0)	16 (69.6)	23 (3.8)
II	2 (5.9)	11 (32.4)	4 (11.8)	17 (50.0)	34 (5.6)
III	0 (0.0)	0 (0.0)	4 (33.3)	8 (66.7)	12 (2.0)
IV	18 (13.8)	30 (23.1)	29 (22.3)	53 (40.8)	130 (21.4)
V	80 (31.1)	73 (28.4)	46 (17.9)	58 (22.6)	257 (42.3)
VI	91 (63.2)	27 (18.8)	12 (8.3)	14 (9.7)	144 (23.7)
VII	6 (85.7)	1 (14.3)	0 (0.0)	0 (0.0)	7 (1.2)
Total	198 (32.6)	145 (23.9)	98 (16.2)	166 (27.3)	607 (100)

Level I: Below Rudimentary

Individuals in this lowest of levels lacked even the most basic literacy skills. They could be called the functional illiterates of Philadelphia, unable to read or write at all in English. Fortunately, these functional illiterates were a very small percentage of the sample as a whole. Overall, only 3.8 percent of the sample could be grouped into this level.

The demographics of this group are very interesting. For the most part, they were older. Fifty-two percent were over 61; almost 70 percent were over 51. Considering that only 27.7 percent of the entire sample fell into these age brackets, the distribution in this group is remarkable.

The group was largely made up of minorities. About 70 percent were Black and 13 percent were Hispanic -- twice as large as the sample percentage. Only 17.4 percent were white. The Hispanics, as the data on birthplace indicate, came from Puerto Rico to the United States and probably never learned English. In this group, 69.6 percent were women, somewhat higher than the sample proportion. Only 30.4 percent were male.

Although 13.6 percent claimed that they were high school graduates, the rest had little or no education. Fifty percent had less than a high school education and another 36.4 percent had some high school experience. Four out of five (78.7 percent) were among Philadelphia's poorest, earning less than $10,000. About 70 percent were unemployed, and another 13 percent were homemakers.

Level II: Rudimentary

At the rudimentary level readers can "carry out simple, discrete reading tasks" (Kirsch & Jungeblut, 1986, p. V-1). Overall, 5.6 percent of the respondents fell into this category.

This group was somewhat more evenly distributed in terms of age. Individuals over 51 comprised only 41.2 percent of the sample. As with the individuals in Level I, minorities were disproportionately represented. Six percent were Asian, 12.1 percent were Hispanic, and 63.6 percent were Black. In terms of sex, 44.1 percent were male and 55.9 percent were female.

Two-thirds of the individuals had not completed high school, although slightly more than a quarter were high school graduates and two individuals even claimed they had received college diplomas. Eighty-five percent of this group earned less than $20,000 and 57.6 percent earned less than $10,000. At the same time, half were unemployed, 11.8 percent were homemakers, and approximately a third were blue collar workers.

Level III: Basic

Another 2.0 percent of the respondents were performing at the Basic level, with "the ability to locate and identify facts from simple informational paragraphs, stories, and news articles. They can combine ideas and make inferences based on short, uncomplicated passages" (Kirsch & Jungeblut, 1986, p. V-2).

In the study sample, this group happened to contain few individuals, so it is difficult to generalize about the characteristics of its members. Briefly, in terms of age, three-quarters were over 50. Unlike the two previous groups, Level III was 75 percent white, although about 42 percent

were born abroad. Thus, for this group, birthplace may have been a factor in their literacy performance. Two-thirds were female and the rest male. Approximately two-thirds had less than a high school education, although one-quarter had a high school diploma. Over 90 percent were earning less than $20,000 and half, less than $10,000. None reported employment outside the home; two-thirds were unemployed and the others were homemakers.

Level IV: Intermediate

At the intermediate level, respondents have the reading proficiency of an average eighth grader, based on the results of the 1983-1984 reading proficiency study of in-school youth. They can "search for specific information, interrelate ideas, and make generalizations" (Kirsch & Jungeblut, 1986, p. V-2). Overall, 21.4 percent of the study participants fell into this intermediate group.

Although a large block of individuals (36.9 percent) were over 51, this group was generally younger than previous groups. Approximately one-quarter (24.6 percent) were under thirty, one-quarter were between 31 and 40, and the rest (13.1 percent) were between 41 and 50. Whites constituted a large component of this group (32.5 percent), but Blacks and Hispanics were still disproportionately represented. The group was also predominantly female (71.5 percent).

Educationally, approximately two-thirds of the group lacked a high school diploma. As with the three previous groups, weak basic skills and lack of education were reflected in the low income levels. Yet, with the literacy skills of perhaps an eighth or ninth grader, these individuals were experiencing somewhat less difficulty finding employment. More than a third

were employed in either white or blue collar professions. Another 22.3 percent were homemakers, and only 40 percent were unemployed.

Level V: Adept

The largest block of study participants (42.3 percent) could be said to be performing at this level. They had the ability to "find, understand, summarize, and explain relatively complicated information" (Kirsch and Jungeblut, 1986, p. V-2).

In this literacy study sample, over half of the adept respondents fell between the ages of 21 and 40. Only about a quarter were 51 or older, and the rest were either very young or in-between. Similarly, as previous research on literacy has indicated, whites tended to outperform their minority counterparts. More than half of the adept group were white, 36 percent were Black, and 3.6 percent were Hispanic. The sex of the members of this group mirrored the sample exactly. Males comprised 37.7 percent of the sample, and females 62.3.

For the most part, respondents who performed at the adept level had significantly more education than did the less skilled. Almost 40 percent had either graduated from or attended college. Another 37.7 percent were high school graduates, and only 22.8 percent had less than a high school education. At the same time, almost 95 percent were born in the United States.

For individuals who performed at the "adept" level or better, improved skills meant higher income and better jobs. Over 40 percent earned above $20,000. Another 26.5 percent earned between $10,000 and $19,000, and only 27.7 percent earned less than $10,000.

Close to 60 percent had jobs, 31.1 percent of which were professional or clerical and 28.4 percent of which were blue collar. Approximately 23 percent were unemployed and another 18 percent are homemakers.

Level VI: Advanced

According to the overall mean score, 23.7 percent, or 144 individuals, were at the advanced level. At this level individuals can "synthesize and learn from specialized reading materials" (Kirsch & Jungeblut, 1986, p. V-3).

As with the adept level, this level contained younger individuals than the less skilled levels. Seven out of 10 individuals in the advanced group were between the ages of 21 and 40. Racially this group is even more disproportionately white than the lower groups were minority. Eighty-six percent of the advanced group were white. Males were more heavily represented than in the other levels, forty-five percent.

Certainly, these top groups contained more highly educated individuals. Although a small number (8.5 percent) of the individuals in the advanced category did not graduate from high school, 40.3 percent did graduate from college. The income statistics for this group ranged from less than $10,000 to more than $35,000, but 42.3 percent earned above $30,000. Skills payed off in terms of employment; less than 10 percent of the advanced group were unemployed, and 63.2 percent held white collar jobs.

Level VII: Above Advanced

This last group was very small, comprising only 1.2 percent of the sample. At this very high level, respondents can deal with unit pricing

situations and place orders from mail order catalogues. They also can deal with highly complex six-figure matching.

Demographic data underline that this is a young group. Seventy-one percent of this group was 30 or younger. Ethnically, the group was monolithic - all white. Interestingly, this was the only group in which males predominated; fifty-seven percent were male.

In terms of schooling, this last group was the most educated; 60 percent had graduated from college. Income varied for this sample group from less than $10,000 to more than $30,000, and 85.7 percent were employed in white collar jobs.

Summary

This section has presented the characteristics of the study sample as it was divided into seven levels of literacy skills. Figure 3 summarizes these levels in terms of the characteristics discussed in this section.

Figure 3

Seven Level Literacy Profile

Level I: Below Rudimentary (3.9 percent) - Older individuals. Primarily minority. Mostly female. Little high school education. Four out of five in lowest income bracket. Seven out of 10 unemployed.

Level II: Rudimentary (5.6 percent) - Some younger individuals, but four out of ten over 50. Nine out of 10 are minority. Slightly more females than males. Two out of three did not complete high school. Some improvement in employment, but still 50 percent unemployed. One-third blue collar workers.

Level III: Basic (2.0 percent) - Older. Primarily white. Many born abroad. Two-thirds female. Two-thirds lacking high school diploma. Nine out of 10 in the two lowest income levels. Two-thirds unemployed.

Level IV: Intermediate (21.4 percent) - Fairly even age distribution. More whites (32.5 percent), although minorities still predominate. Mostly female. Lack of education. Two-thirds lack high school diploma. Somewhat lower unemployment level than previous three groups (40 percent).

Level V: Adept (42.3 percent) - Younger. Half between the ages of 21-40. Fewer minorities. More than half white. Sex group distribution mirrors sample. More educated. Less than a quarter have not been graduated from high school. Higher income and increased employment. More white collar jobs.

Level VI: Advanced (23.7 percent) - Significantly younger. Few minorities. Increased number of men. Most high school graduates. Higher income and employment rates. Most hold white collar jobs.

Level VII: Above Advanced (1.2 percent) - Young. White. More men than women. Majority are college graduates. Good income. White collar jobs. No unemployment.

4. CHARACTERISTICS OF LESS LITERATES: FINDINGS

Who are Philadelphia's least literate persons? What skills do they possess? How are they employed? What are their aspirations? This section of the report discusses the characteristics of individuals with lower levels of basic skills and compares these less skilled individuals with respondents who scored higher on the literacy workbook tasks.

To facilitate this comparison, the seven levels of literacy utilized in the previous section were collapsed into three groups: a lower literate group (Levels I, II, and III), an intermediate group (Level IV), and a higher literate group (Levels V, VI, and VII). These groups were then analyzed with respect to five groups of characteristics - demographics, educational perceptions and aspirations, jobs and income, daily behavior and needs, and experience with literacy services.

Three Levels of Literacy Skills

Table 14 presents proficiency statistics describing the three literacy groups to be discussed in this section of the report.

Table 14

Three Levels of Literacy

Literacy Level	N(%)	Reading Proficiency x	Quantitative Literacy x	Document Utilization x	Mean x
Lower	69 (11.4)	163	37	209	136
Intermediate	130 (21.4)	246	283	250	260
Higher	408 (67.2)	295	319	343	319
Total	607 (100)	-	-	-	-

Group 1: Lower Literacy

Of the 607 individuals interviewed in this study, 69 or 11.4 percent were classified as lower literate, with an average mean performance of 136 on the three literacy scales. It is important to note that "lower" literate is not synonymous with "illiterate." As the data in the previous section indicated, all but 3.8 percent of the individuals in our study had some literacy skills. According to Kirsch and Jungeblut (1986, p. V-1), individuals performing at this lower level can "follow brief written directions. They can also select words, phrases, or sentences to describe a simple picture and can interpret simple written clues to identify a common object." When Kirsch and Jungeblut compared their young adults to the in-school population, they found that a person reading at about the 200 level was approximately equivalent to a fourth grader, so this lower literate group would be somewhat below that level in performance.

The mean score on the document utilization scale (209) was substantially higher than the reading proficiency score (163). The document utilization tasks generally involved one-feature matching, such as signing one's name on a social security card, or identifying the correct time of a meeting on a form. The quantitative literacy mean score was quite low (37), as would be expected since the test items in this subtest initiate around the Adept Level, and few lower literate individuals would get any of them correct.

Group 2: Intermediate Literacy

One hundred and thirty individuals, 21.4 percent of the study sample, were defined as intermediate in their literacy skills. Their average mean

score across all of the literacy scales was 260. On the reading scale, the average mean was 246. According to Kirsch and Jungeblut (1986, p. V-2): an individual reading at this level can "search for, locate, and organize the information they find in relatively lengthy passages and can recognize paraphrases of what they have read. They can also make inferences and reach generalizations about main ideas and author's purpose from passages dealing with literature, science, and social studies." NAEP researchers indicate that the average mean for eighth grade in-school youth is about 260. Thus, the individuals classified as intermediates on this study are reading at the eighth grade level.

The mean quantitative literacy score was 283. A task at that level might involve filling out a deposit slip for a bank, for example. Such a task involved adding up the numbers to get a correct total, reading the directions to the question, and following the indications on the form.

The mean intermediate level document utilization score was 250. As Kirsch and Jungeblut (1986, p. 23) indicate, tasks at this level involve "matching information on the basis of two features from documents containing several distractors or plausible answers."

Group 3: Higher Literacy

Four hundred and eight individuals, with an average overall mean score of 319, were classified as higher literate. Most of the individuals in this higher group have acquired sufficient literacy skills to function in society and achieve many of their goals.

On the reading proficiency scale, the higher literate group averaged 295. Tasks at this level include locating information on the basis of three features in an article or interpreting instructions. Compared to in-school

youth, a person performing around the 300 level on the prose scale is reading at about a twelfth grade level.

The higher literates averaged 319 on the quantitative literacy scale. Representative tasks involve matching information and then applying two or more sequential operations.

The average score on the document utilization scale was the highest of all, 343. Respondents performing at this level were able to match information on the basis of many different features. A typical example involved figuring out answers to a variety of questions that involved using a bus schedule.

Demographics

This section compares the groups on demographic characteristics. Those characteristics included are age, sex, race, birthplace, education level, language spoken at home, and physical problems.

Age

The lowest literates were substantially older than members of the other two groups. As the data in Table 15 indicate, 56.5 percent, or almost six out of every 10 individuals were over 50 years of age, and four out of 10 were over 60. In the intermediate group only 37.2 percent were over 50; in the higher group there were still fewer, 19.9 percent.

Table 15

Age

Level \ Age	18-20 N (%)	21-30 N (%)	31-40 N (%)	41-50 N (%)	51-60 N (%)	61-Above N (%)	Total N (%)
Lower	2 (2.9)	11 (15.9)	11 (15.9)	6 (8.7)	11 (15.9)	28 (40.6)	69 (11.4)
Inter-mediate	8 (6.2)	23 (17.8)	33 (25.6)	17 (13.2)	17 (13.2)	31 (24.0)	129 (21.3)
Higher	28 (6.9)	138 (33.9)	110 (27.0)	50 (12.3)	41 (10.1)	40 (9.8)	407 (67.3)
Total	40 (6.6)	172 (28.3)	154 (25.4)	73 (12.0)	69 (11.4)	99 (16.3)	605 (100)

Sex

The data in Table 16 show that the sample was biased in favor of women. The lower literate group paralleled the sample split exactly. The intermediate group was more imbalanced -- 71.5 percent female, while the higher literate group was the most evenly balanced, with only 59.3 percent female.

Table 16

Sex

Level \ Sex	Male N (%)	Female N (%)	Total N (%)
Lower	26 (37.7)	43 (62.3)	69 (11.4)
Intermediate	37 (28.5)	93 (71.5)	130 (21.4)
Higher	166 (40.7)	242 (59.3)	408 (67.2)
Total	229 (37.7)	378 (62.3)	607 (100)

Race

Clearly minorities were overrepresented in the lower and intermediate group. As Table 17 shows, 72 percent, or almost three-quarters of the lowest literate group, were minorities. This trend was reversed in the highest group, where 67.8 percent, or more than two-thirds of the higher group, were white. In this study, Hispanics fared the least well; of the 36 Hispanic individuals surveyed, 22.2 percent were in the lower group and 41.7 in the intermediate. Ten Asians were included; of these, two were in the lower group, three in the intermediate, and five in the higher. Of the 208 Blacks in the study, 18.7 percent were in the lower group, 32.2 percent were at the intermediate level, and 49.0 percent were in the higher group. Few whites were in the lower group -- only 5.8 percent; the intermediate group contained 12.6 percent; and the higher group, 81.5 percent.

Table 17

Race

Race / Level	White N (%)	Black N (%)	Hispanic N (%)	Asian N (%)	Other N (%)	Total N (%)
Lower	19 (27.9)	39 (57.4)	8 (11.8)	2 (2.9)	0 (0.0)	68 (11.6)
Intermediate	41 (32.5)	67 (53.2)	15 (11.9)	3 (2.4)	0 (0.0)	126 (21.5)
Higher	265 (67.8)	102 (26.1)	13 (3.3)	5 (1.3)	6 (1.5)	391 (66.8)
Total	325 (55.5)	208 (35.5)	36 (6.1)	10 (1.7)	6 (1.0)	585 (99.9)

Totals of less than 100% are due to rounding.

Birthplace

Although less than 10 percent of the individuals included in this study were born outside of the United States, the lower and intermediate groups contained somewhat higher percentages than did the higher literate group. Approximately 19 percent of the lower literates were born abroad -- 8.7 percent in Puerto Rico and 10.1 percent somewhere else; the intermediate group were approximately 17 percent foreign-born. The higher group figure was only 4.9 percent. These data are contained in Table 18.

Table 18

Place of Birth

Place / Level	U.S. (50 states) N (%)	Puerto Rico N (%)	Foreign Country N (%)	Other U.S. Territory N (%)	Total N (%)
Lower	56 (81.2)	6 (8.7)	7 (10.1)	0 (0.0)	69 (11.6)
Intermediate	108 (83.1)	10 (7.7)	12 (9.2)	0 (0.0)	130 (21.4)
Higher	388 (95.1)	2 (0.5)	18 (4.4)	0 (0.0)	408 (67.2)
Total	552 (90.9)	18 (3.0)	37 (6.1)	0 (0.0)	607 (100)

Education Level

High school completion and literacy clearly go hand in hand. As the data in Table 19 illustrate, 73.4 percent, or almost three-quarters of the lower literate group, had not completed high school and one-quarter had not even attended secondary school. Almost 22 percent had completed high school, and 4.7 percent had college experience. In the intermediate group, 62.5 percent had not completed high school, one-quarter had graduated, and 12.5 percent had some college or were graduates. At the higher level, however, only 17.4 percent were not high school graduates. Many (28.7 percent) had college experience, and 23.2 percent had completed college.

Table 19

Respondent Education Level

Education / Level	Less than H.S. N (%)	Some H.S. N (%)	H.S. Graduate N (%)	Some College N (%)	College Graduate N (%)	Total N (%)
Lower	16 (25.0)	31 (48.4)	14 (21.9)	1 (1.6)	2 (3.1)	64 (11.7)
Intermediate	10 (8.3)	65 (54.2)	30 (25.0)	10 (8.3)	5 (4.2)	120 (22.0)
Higher	1 (0.3)	62 (17.1)	111 (30.7)	104 (28.7)	84 (23.2)	362 (66.3)
Total	27 (4.9)	158 (28.9)	155 (28.4)	115 (21.1)	91 (16.7)	546 (100)

Language Spoken at Home

For most of the respondents, over 80 percent in each group, English was indicated as the language spoken at home (Table 20). The intermediate group was the lowest on this measure. Spanish was spoken at home by 10.1 percent and 13.8 percent of the two lower groups, but only 2.9 percent of the higher group. A language other than Spanish was spoken at home by 10.1 percent of the lower literates, 16.2 percent of the intermediates, and 10.5 percent of the higher literates.

Table 20

Language Spoken at Home*

Language / Level	English N (%)	Spanish N (%)	Other N (%)
Lower	61 (88.4)	7 (10.1)	7 (10.1)
Intermediate	109 (83.8)	18 (13.8)	21 (16.2)
Higher	390 (95.6)	12 (2.9)	43 (10.5)

*Some respondents (61) indicated more than one language.

Physical Problems

Of the total sample, 178 persons, or 29.3 percent, indicated the presence of physical problems (Table 21). Lower literates reported more than twice as many physical problems that could have affected their ability to read and write than the higher literates. Over 60 percent of the lower literates claimed physical problems, whereas only 22.3 percent of the higher literates and 33.8 percent of the intermediates made the same claim. Among the most frequently cited problems were extended illness (23.2 percent), physical disabilities (23.2 percent), and vision problems (14.5 percent).

Table 21

Physical Problems

Problems / Level	None N (%)	Dyslexia N (%)	L.D. N (%)	Spec. Ed. N (%)	Vision N (%)	Hearing N (%)	Speech N (%)	Phys. Disab. N (%)	Extend Illness N (%)
Lower	26 (37.7)	0 (0.0)	6 (8.7)	8 (11.6)	10 (14.5)	7 (10.1)	4 (5.8)	16 (23.2)	16 (23.2)
Intermediate	86 (66.2)	1 (0.1)	4 (3.1)	2 (1.5)	15 (11.5)	10 (7.7)	9 (6.9)	23 (17.7)	17 (13.1)
Higher	317 (77.7)	6 (1.5)	6 (1.5)	6 (1.5)	18 (4.4)	29 (7.1)	9 (2.2)	27 (6.6)	23 (5.6)

*Some respondents (94) indicated more than one problem.

Educational Perceptions and Aspirations

Respondents were asked how they would rank their elementary and secondary schooling, and how they felt about themselves as learners at these different levels. They were also asked how far they would like to go in school, if they had the opportunity. The results are reported below.

Perception of Schooling

Although a majority of respondents in all groups felt that their elementary and secondary school experiences were either excellent or good, more lower literates felt that their schooling was fair to poor than did either higher group. As the data in Table 22 indicate, 36.4 percent of the lower group, compared with 24 percent and 16.4 percent of the intermediate and higher groups respectively, rated their education as fair to poor at the elementary level. The pattern was similar for secondary schooling, as 40.5 percent of the lower group, 25.4 percent of the intermediates, and 26.0 percent of the higher literates gave fair to poor ratings.

Table 22

Perception of Schooling

School Perception	Elementary			Secondary		
	Excellent/ Good	Fair/ Poor	Total	Excellent/ Good	Fair/ Poor	Total
Level	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Lower	42 (63.6)	24 (36.4)	66 (10.9)	22 (59.5)	15 (40.5)	37 (6.7)
Intermediate	98 (76.0)	31 (24.0)	129 (21.4)	85 (74.6)	29 (25.4)	114 (20.7)
Higher	341 (83.6)	67 (16.4)	408 (67.7)	295 (73.9)	104 (26.0)	399 (72.5)
Total	481 (79.8)	122 (20.2)	603 (100)	402 (73.1)	148 (26.9)	550 (100)

Perception of Self as Learner

Lower literates more frequently have a poor image of themselves as learners than do intermediate or higher literates. Moreover, their self image appears to be formed at the elementary level, and doesn't change much at the secondary level. As Table 23 indicates, close to half of the lower literate group rated themselves as fair or poor learners in both elementary and secondary school. For intermediates, there was a notable downward trend from elementary to secondary in self image, with 28.5 percent fair or poor elementary ratings and 44.7 percent at the secondary level. Among the higher literate group about one-quarter gave fair or poor ratings at both levels.

Table 23

Perception of Self as Learner

Self Perception / Level	Elementary			Secondary		
	Excellent/ Good N (%)	Fair/ Poor N (%)	Total N (%)	Excellent/ Good N (%)	Fair/ Poor N (%)	Total N (%)
Lower	37 (55.2)	30 (44.8)	67 (11.1)	20 (54.1)	17 (45.9)	37 (6.7)
Intermediate	93 (71.5)	37 (28.5)	130 (21.5)	63 (55.3)	51 (44.7)	114 (20.7)
Higher	321 (78.9)	86 (21.1)	407 (67.4)	297 (74.4)	102 (25.6)	399 (72.5)
Total	451 (74.9)	153 (25.3)	604 (100)	380 (69.1)	170 (30.9)	550 (100)

Educational Aspirations

Three-quarters of the lower literate group had less than a high school education, but most indicated a desire to graduate from high school, or even college. Less than 15 percent of this lower group didn't aspire to finish high school (Table 24).

Table 24

Educational Aspirations

Education / Level	Less than H.S. N (%)	Some H.S. N (%)	H.S. Graduate N (%)	Some College N (%)	College Graduate N (%)	Other N (%)	Total N (%)
Lower	5 (7.4)	5 (7.4)	34 (50.0)	2 (2.9)	21 (30.9)	1 (1.5)	68 (12.3)
Intermediate	3 (2.5)	4 (3.4)	58 (49.2)	13 (11.0)	40 (33.9)	0 (0.0)	118 (21.3)
Higher	11 (3.0)	7 (1.9)	62 (16.8)	36 (9.8)	253 (68.6)	0 (0.0)	369 (66.5)
Total	19 (3.4)	16 (2.9)	154 (27.7)	51 (9.2)	314 (56.6)	1 (0.2)	555 (100)

The results are equally dramatic for the intermediate and the higher literate groups, although their aspirations surpass those of the lower group. Where 37.5 percent of the intermediate group had completed high school, 49.2 percent aspired to do so, 11.9 percent wished to attend college, and 33.9 percent wanted to graduate from college. For the higher literates, the emphasis was on college completion. Only 23.2 percent actually were college graduates, but 68.6 percent aspired to be so.

Jobs and Income

Respondents were asked about their income level, their current job, and their job aspirations. Tables 25, 26, and 27 present the results.

Income Level

Table 25 contains the data pertaining to income. In the lower literate group, 63.2 percent, or almost two-thirds, reported $10,000 or less in income. Another 22.1 percent indicated earnings of less than $20,000. Only 8.9 percent earned over $20,000. In the intermediate group, slightly over half of the individuals (51.6 percent) were in the lowest income bracket, and another 28.2 percent earned below $20,000. At this literacy level, still only 15.3 percent reported more than $20,000. Among the higher literates, only 23.3 percent were in the lowest income bracket, 22.3 percent reported less than $20,000, and over half (51.1 percent) earned $20,000 or more.

Table 25

Income

Income / Level	Less than 10,000 N (%)	10-19,999 N (%)	20-29,999 N (%)	30-49,999 N (%)	50,000 or more N (%)	DK-NA N (%)	Total N (%)
Lower	43 (63.2)	15 (22.1)	4 (5.9)	1 (1.5)	1 (1.5)	4 (5.9)	68 (11.7)
Intermediate	64 (51.6)	35 (28.2)	13 (10.5)	5 (4.0)	1 (0.8)	6 (4.8)	124 (21.3)
Higher	91 (23.3)	87 (22.3)	94 (24.0)	78 (19.9)	28 (7.2)	13 (3.3)	391 (67.1)
Total	198 (34.0)	137 (23.5)	111 (19.0)	84 (14.4)	30 (5.2)	23 (3.9)	583 (100)

Employment

For the lower literates, unemployment was more prevalent than for those with higher literacy skills (Table 26). Approximately six out of 10 in the lower literacy group were unemployed, compared with four out of ten of the intermediates and less than two out of ten of the higher literates. Those lower literates who were not unemployed were almost all in either homemaking (15.9 percent) or blue collar professions (20.3 percent).

The intermediate group also experienced high unemployment -- 40.8 percent. Those not unemployed also were primarily involved in homemaking (22.3 percent) or blue collar professions (23.1 percent). At the other end of the spectrum, 43.4 percent of the higher literates were employed in white collar positions, 24.8 percent in blue, 14.2 percent in homemaking, and only 1[illegible].6 percent were unemployed.

Table 26

Employment

Employment / Level	Prof./Mgr. Cler./Sales N (%)	Crafts/Foreman Laborer/Serv. N (%)	Home-maker N (%)	Unem-ployed N (%)	Total N (%)
Lower	3 (4.3)	14 (20.3)	11 (15.9)	41 (59.4)	69 (11.4)
Intermediate	18 (13.8)	30 (23.1)	29 (22.3)	53 (40.8)	130 (21.4)
Higher	177 (43.4)	101 (24.8)	58 (14.2)	72 (17.6)	408 (67.2)
Total	198 (32.6)	145 (23.9)	98 (27.3)	166 (27.3)	607 (100)

Job Aspirations

The individuals in this study, for the most part, have a job to which they aspire, although less literates appear to have lower aspirations than do intermediate or higher literates. Where 20.3 percent of the less literates were employed in blue collar professions, 61.2 percent would like such employment. Where 4.3 percent were working in white collar jobs, 26.9 percent would like to be. No one indicated they would like to be a homemaker. Almost 12 percent did indicate that they would like no job, but it is important to remember that this group contained many older people who may have been retired.

As literacy skills increase, the desire for white collar jobs increases. Forty-eight percent of the intermediates and 76.2 percent of the higher literates aspired to white collar positions, where only 13.8 percent of the intermediates and 43.4 percent of the higher literates were actually employed in white collar professions (Table 27).

Table 27

Job Aspirations

Job Aspirations / Level	Prof./ Mgr. & Cler./ Sales N (%)	Crafts/ Foreman & Laborer/ Service N (%)	Home maker N (%)	No Job N (%)	Total N (%)
Lower	18 (26.9)	41 (61.2)	0 (0.0)	8 (11.9)	67 (11.4)
Intermediate	60 (48.0)	54 (43.2)	0 (0.0)	11 (8.8)	125 (21.3)
More Literate	301 (76.2)	76 (19.2)	1 (0.3)	17 (4.3)	395 (67.3)
Total	379 (64.6)	171 (29.1)	1 (0.2)	36 (6.1)	587 (100)

Literacy-Related Behavior and Needs

This section reports the findings related to the reading and writing activities of study participants, their use of public transportation, and their views of literacy needs.

Reading Activities

Although lower literates read significantly less than their more literate peers, they did read. Almost eight out of 10 indicated that they read newspapers weekly (Table 28), two-thirds read magazines weekly (Table 29), and more than half read books (Table 30). In comparison, approximately 97 percent of the intermediates and 95 percent of the higher literates spent time reading newspapers, approximately 90 percent of both groups read magazines weekly, and close to 60 percent of the intermediates and 75 percent of the higher literates read books.

Table 28

Hours Spent Reading Newspapers Weekly

Level \ Hours	None N (%)	1-5 N (%)	6-10 N (%)	11-15 N (%)	16-20 N (%)	More than 20 N (%)	Total N (%)
Lower	14 (20.9)	36 (53.7)	13 (19.4)	2 (3.0)	1 (1.5)	1 (1.5)	67 (11.1)
Intermediate	4 (3.1)	73 (56.2)	37 (28.5)	12 (9.2)	2 (1.5)	2 (1.5)	130 (21.5)
Higher	21 (5.1)	237 (58.1)	120 (29.4)	15 (3.7)	7 (1.7)	8 (2.0)	408 (67.4)
Total	39 (6.4)	346 (57.2)	170 (28.1)	29 (4.8)	10 (1.7)	11 (1.8)	605 (100)

Table 29

Hours Spent Reading Magazines Weekly

Level \ Hours	None N (%)	1-5 N (%)	6-10 N (%)	11-15 N (%)	16-20 N (%)	More than 20 N (%)	Total N (%)
Lower	23 (33.3)	39 (56.5)	6 (8.7)	1 (0.4)	0 (0.0)	0 (0.0)	69 (11.4)
Intermediate	15 (11.5)	93 (71.5)	13 (10.0)	6 (4.6)	1 (0.8)	2 (1.5)	130 (21.5)
Higher	41 (13.0)	312 (76.7)	40 (9.8)	8 (2.0)	4 (1.0)	2 (0.5)	407 (67.1)
Total	79 (13.0)	444 (73.3)	59 (9.7)	15 (2.5)	5 (0.9)	4 (0.7)	606 (100)

Table 30

Hours Spent Reading Books

Group \ Hours	None N (%)	1-5 N (%)	6-10 N (%)	11-15 N (%)	16 or More N (%)	Total N (%)
Lower	32 (46.4)	22 (31.9)	2 (2.9)	2 (2.9)	11 (15.9)	69 (11.4)
Intermediate	53 (40.8)	23 (17.7)	24 (18.5)	5 (3.8)	25 (19.2)	130 (21.5)
Higher	108 (26.5)	94 (23.1)	50 (12.3)	17 (4.2)	138 (33.9)	407 (67.2)
Total	193 (31.8)	139 (22.9)	76 (12.5)	24 (4.0)	174 (28.7)	606 (100)

80

With respect to Philadelphia newspapers, slightly more lower literates read the "Daily News" (53.6 percent) than the "Philadelphia Inquirer" (49.3 percent) (Table 31). A fifth of the higher literates read "The New York Times," "The Wall Street Journal," or "USA Today." In the higher literate group almost 80 percent read the "Inquirer," where less than 60 percent read the "Daily News."

Table 31

Newspapers Read*

Newspaper / Level	Phila. Inquirer N (%)	Daily News N (%)	N.Y. Times N (%)	USA Today N (%)	W.S.J. N (%)
Lower	34 (49.3)	37 (53.6)	0 (0.0)	1 (1.4)	1 (1.4)
Intermediate	94 (72.3)	93 (71.5)	4 (3.1)	2 (1.5)	1 (0.8)
Higher	324 (79.4)	240 (58.8)	41 (10.0)	12 (2.9)	25 (6.1)

*Some respondents (302) indicated more than one newspaper.

For all readers, the most popular section of the paper was the section with state and local news (Table 32). The next most popular sections treat national and international news, classified advertisements, sports, and finance. As the percentages in table indicate, lower literates were not as likely to read multiple sections of the paper as were intermediate and higher literates.

Table 32

Parts of Newspapers Read*

Newspaper Section / Level	Natl/ Inter News N (%)	State/ Local News N (%)	Sports N (%)	Financial N (%)	Classified N (%)
Lower	32 (46.4)	41 (59.4)	20 (28.9)	12 (17.4)	31 (44.9)
Intermediate	92 (70.8)	103 (79.2)	56 (43.1)	23 (17.7)	77 (59.2)
Higher	304 (74.5)	328 (80.4)	181 (44.4)	130 (31.9)	202 (49.5)

*Some respondents indicated more than one part.

Writing Activities

Although over half of the lower literates did some kind of writing during their free time (52.2 percent), this number was well below that of those with more literacy skills (Table 33). At the intermediate level, 73.8 percent of the respondents did some writing; and at the higher level, 82.1 percent did so. Moreover, approximately three times as many intermediates and four times as many higher literates were likely to write on a daily basis during their free time, as were lower literates.

Table 33

Free Time Spent Writing

Writing / Level	Daily N (%)	Weekly N (%)	Monthly N (%)	More Than Monthly N (%)	Never N (%)	Total N (%)
Lower	4 (5.8)	11 (15.9)	8 (11.6)	13 (18.8)	33 (47.8)	69 (11.4)
Intermediate	22 (16.9)	18 (13.8)	33 (25.4)	23 (17.7)	34 (26.2)	130 (21.4)
Higher	91 (22.3)	75 (18.4)	68 (16.7)	101 (24.8)	73 (17.9)	408 (67.2)
Total	117 (19.3)	104 (17.1)	109 (18.0)	137 (22.6)	140 (23.1)	607 (100)

Household Reading and Writing

Lower literates did report performing a variety of household tasks that involved some measure of reading and writing, but they did so with less frequency than their more skilled counterparts (Table 34). For example, 31.9 percent of the lower literates balanced a checkbook, as compared with 43.8 percent of the intermediates and 59.8 percent of the higher literates. Also, 36.2 percent of the lower literates read a cookbook, as compared with 58.5 percent and 55.4 percent of the intermediate and higher literates respectively. Finally, 69.6 percent of the lower literates used the telephone book, as compared with 83.1 and 91.2 percent of the intermediate and higher literate groups. When it came to paying bills, however, 75.4 percent of the lower literates reported responsibility, slightly above the 70 percent of the intermediate and higher literates.

Table 34

Household Responsibilities*

Responsibility / Level	Pay Bills N (%)	Balance Checkbook N (%)	Read Cookbook N (%)	Use Phone Book N (%)
Lower	52 (75.4)	22 (31.9)	25 (36.2)	48 (69.6)
Intermediate	91 (70.0)	57 (43.8)	76 (58.5)	108 (83.1)
Higher	286 (70.1)	244 (59.8)	226 (55.4)	372 (91.2)

*Some respondents indicated more than one entry.

Transportation

How did persons with lower literacy skills get around the city? Table 35 provides some interesting answers to this question.

Table 35

Public Transportation Used

Transportation / Level	Bus	Trolley	Subway/El	Train	None	Total
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Lower	40 (58.0)	4 (5.8)	8 (11.6)	0 (0.0)	17 (24.6)	69 (11.4)
Intermediate	68 (52.3)	11 (8.5)	18 (13.8)	1 (0.8)	32 (24.6)	130 (21.4)
Higher	124 (30.4)	37 (9.1)	84 (20.6)	5 (1.2)	158 (38.7)	408 (67.2)
Total	232 (38.2)	52 (8.6)	110 (18.1)	6 (1.0)	207 (34.1)	607 (100)

As can be seen, more lower and intermediate group members used public transportation than did higher literates. For the most part, the two lower groups either took buses or did not use public transportation. Since these groups generally were older, the preference for buses was predictable, as they may be easier to access and use than other forms of transport. Only 30.4 percent of the higher literate group took buses and another 20.6 percent use the subway or elevated train. The choice of 38.7 percent of this higher group was not to use public transportation.

Literacy Needs

Both lower groups indicated that they had some literacy needs; although, for many, these needs were few (Table 36). Ten percent of the lower literates and 15.4 percent of the intermediates indicated that they had no literacy needs. An additional 34.8 and 40.8 percent of these two groups respectively indicated that they had between one and five needs. On the other hand, one-third of the lower literates, said they needed help on more than 11 tasks, compared with a quarter of the intermediates and only 4.4 percent of the higher literates. More than 40 percent of the higher literates had no needs at all.

Table 36

Literacy Needs

Needs / Level	No Needs N (%)	Needs in 1-5 areas N (%)	Needs in 6-10 areas N (%)	Needs in 11-15 areas N (%)	Needs in more than 15 areas N (%)	Total N (%)
Lower	7 (10.1)	24 (34.8)	15 (21.7)	12 (17.4)	11 (15.9)	69 (11.4)
Intermediate	20 (15.4)	53 (40.8)	26 (20.0)	18 (13.8)	13 (10.0)	130 (21.4)
Higher	165 (40.4)	188 (46.1)	38 (9.3)	9 (2.2)	8 (2.0)	408 (67.2)
Total	192 (31.6)	265 (43.7)	79 (13.0)	39 (6.4)	32 (5.3)	607 (100)

Table 37 reports the skills respondents thought they most needed to improve. For all groups, the skills most frequently selected were very similar: completing income tax, reading maps, helping children with school, and reading a thermometer. In all skills lower literates more frequently indicated need for improvement.

Table 37

Skills Needing a Lot of Improvement

Skill / Level	Income Tax N (%)	Reading Maps N (%)	Helping Children w/ School N (%)	Reading Bible N (%)	Reading Thermometer N (%)
Lower	37 (53.6)	25 (36.2)	22 (31.9)	16 (23.2)	21 (30.4)
Intermediate	53 (40.8)	37 (28.5)	27 (20.1)	22 (16.9)	21 (16.2)
Higher	81 (19.9)	28 (6.9)	22 (5.4)	25 (6.1)	15 (3.7)

Skill / Level	Budgeting Money N (%)	Reading Leases N (%)	Reading Medical Labels N (%)	Doing Job Applic. N (%)	Using Checking Account N (%)
Lower	13 (18.8)	16 (23.3)	13 (18.8)	16 (23.2)	13 (18.8)
Intermediate	15 (11.5)	16 (12.3)	18 (13.8)	15 (11.5)	15 (11.5)
Higher	23 (5.6)	17 (4.2)	12 (2.9)	8 (2.0)	11 (2.7)

Experiences with Literacy Services

The final section of this chapter looks at the experiences respondents had with Philadelphia's literacy services and their reactions to these experiences.

Knowledge of Literacy Services

The results strongly indicate that lower literates knew where to go for help in improving their literacy skills. As Table 38 shows, 88.4 percent of the lower literates knew of at least one place to go to for assistance, and 60.9 percent knew of more than two places. Among the intermediates and the higher literates, awareness of literacy services was even more pronounced -- 96.2 percent of the intermediates and 99.5 percent of the higher literates were familiar with at least one place to go for help.

Table 38

Familiarity With Literacy Services

Services / Level	None N (%)	1 or 2 N (%)	More than 2 N (%)	Total N (%)
Lower	8 (11.6)	19 (27.5)	42 (60.9)	69 (11.4)
Intermediate	5 (3.8)	18 (13.8)	107 (82.3)	130 (21.4)
Higher	2 (0.5)	95 (23.3)	311 (76.2)	408 (67.2)
Total	15 (2.5)	132 (21.7)	460 (75.8)	607 (100)

Furthermore, when asked where they would send an individual who needed to improve reading and math skills, almost all respondents could make a concrete suggestion. Some mentioned the Mayor's Commission on Literacy, "I

see the mayor saying, 'If you know of anybody who needs help with reading, call this number.'" Others said they would "go to the library. Someone there would know what to tell them." Still others indicated that they would call the school district or a teacher they knew. "I might call the school district to find out what programs are available." Some even mentioned the church: "Tell them to contact the clergy and they could help them."

Interestingly, many individuals made multiple specific references. Said one, "Lutheran Settlement House... There's a program at Community College, and there's also that Mayor's program for adults who can't read." Another added, "I know there's a literacy program at City Hall, and also I could offer my help. I think there's a Plus program... Well, the Board of Education."

Respondents were also asked if they knew of specific literacy initiatives in the city. The data presented in Tables 39-43 describe their responses.

Table 39

Know of MCL

Know of MCL / Level	Yes N (%)	No N (%)	Total N (%)
Lower	51 (73.9)	18 (26.1)	69 (11.4)
Intermediate	111 (85.4)	19 (14.6)	130 (21.4)
Higher	361 (88.5)	47 (11.5)	408 (67.2)
Total	523 (86.2)	84 (13.8)	607 (100)

Table 40

Know of Center for Literacy

Know of CFL / Level	Yes N (%)	No N (%)	Total N (%)
Lower	20 (29.0)	49 (71.0)	69 (11.4)
Intermediate	47 (36.1)	83 (63.8)	130 (21.4)
Higher	166 (40.7)	242 (59.3)	408 (67.2)
Total	233 (38.4)	374 (61.6)	607 (100)

Table 41

Know of Lutheran Settlement House

Know of LSH / Level	Yes N (%)	No N (%)	Total N (%)
Lower	23 (33.3)	46 (66.7)	69 (11.4)
Intermediate	43 (33.1)	87 (66.9)	130 (21.4)
Higher	120 (29.4)	288 (70.6)	408 (67.2)
Total	186 (30.6)	421 (69.4)	607 (100)

Table 42

Know of YMCA Programs for Reading

Know of YMCA / Level	Yes N (%)	No N (%)	Total N (%)
Lower	36 (52.2)	33 (47.8)	69 (11.4)
Intermediate	75 (57.7)	55 (42.3)	130 (21.4)
Higher	188 (46.1)	220 (53.9)	408 (67.2)
Total	299 (49.3)	308 (50.7)	607 (100)

Table 43

Know of Project PLUS

Level \ Know of PLUS	Yes N (%)	No N (%)	Total N (%)
Lower	18 (26.1)	51 (73.9)	69 (11.4)
Intermediate	46 (35.4)	84 (64.6)	130 (21.4)
Higher	149 (36.5)	258 (63.2)	408 (67.2)
Total	213 (35.1)	393 (64.7)	607 (100)

Whether lower, intermediate, or higher literate, most Philadelphians were aware of the Mayor's Commission on Literacy (MCL). The percentage of lower literates who knew of the MCL (73.9 percent) was smaller than that of intermediates (85.4 percent) or higher literates (88.5 percent), but still substantial.

The programs with the most recognition were those at the YMCA, The Lutheran Settlement House, and The Center for Literacy. Interestingly, despite all the publicity given to Project Plus, only about a quarter of the lower literates and a little more than a third of the intermediate and higher literates had heard of the program.

Although lower literates, and even intermediates, for the most part were aware of the availability of literacy services, few chose to avail themselves of those opportunities, and even fewer completed the program they started. Among the lower literates, only 27.5 percent sought help from one of the service providers; and of this 27.5 percent, less than half (10.5 percent) completed the program. Among the intermediates, even fewer (23.1 percent) sought help, and only 10 percent finished (Table 44).

Table 44

Literacy Experiences

Experiences / Level	Help Sought N (%)	Still Getting Help N (%)	Completed Program N (%)	Dropped Out N (%)
Lower	19 (27.5)	0 (0.0)	2 (10.5)	17 (89.5)
Intermediate	30 (23.1)	1 (0.8)	3 (10.0)	26 (86.7)

When asked why they didn't seek help, 58 percent of the lower literates indicated they had no need, 55 percent said that their job was more important, and 53 percent said that they had no time (Table 45). Literacy was just not a priority.

Table 45

Reasons for Not Seeking Help When Needed

Reason / Level	Job More Important N (%)	No Time N (%)	No Need N (%)
Lower	21 (55)	20 (53)	25 (58)
Intermediate	24 (36)	32 (48)	42 (53)
Higher	31 (36)	46 (54)	157 (87

Those who had attended literacy programs were also asked what would make the programs better. Answers were open-ended and often highly individualized. Suggestions included adding day care, having smaller classes, providing transportation, or making the material more relevant to the real world. The most common response, however, was "nothing," suggesting again that the real reason for not seeking help was lack of desire to really do so.

5. METHODOLOGY FOR STUDYING LITERACY: FINDINGS

Conducting this study produced, among other findings, new knowledge concerning some of the methodological issues involved in assessing adult literacy. Such issues include defining literacy, instrumentation, sampling, and interview techniques, and advisory committees. Discussion of each of these issue areas follows.

Defining Literacy

The concept of literacy is a relative rather than an absolute concept. Both the NAEP national study of young adults and the present study uncovered extremely few functionally illiterate individuals. Even most of those individuals classified as low literates were still able to read at some fundamental level. Literacy in the modern context thus must be viewed in terms of the skills needed to function in society, to achieve one's goals, and to develop one's knowledge and potential. When literacy is cast in these terms, its definition depends on society's standards and the nature of the individual's interaction with society. To get along in a particular society requires mastery of a level of literacy skills defined by the individual's needs and roles in that society.

This definition implies the ordering of literacy skills from a minimal to a maximal level for individuals. But literacy is not a single skill. In today's society, simple comprehension of written passages is insufficient to be able to cope with everyday life's requirements. This study, following the NAEP research, added two other sets of literacy skills to the operational definition: quantitative or mathematical skills and skills in the interpretation of documents. While providing certain difficulties in

assessment and classification of individuals, this approach was found to provide a richer base with which to describe the literacy profile of Philadelphia and help service providers in targeting their remediation efforts more appropriately.

Instrumentation

The study of adult literacy in Philadelphia, in many respects, was patterned after the NAEP study of literacy among young adults, especially in terms of the way literacy was defined and assessed. Assessment items were borrowed from the NAEP study and used, with permission, by RBS researchers. However, because of the more limited resources available to the RBS study as contrasted to those utilized by NAEP, a different methodological approach and instrumentation needed to be devised by RBS. Another reason for this need was the fact that RBS' sample was not limited to the 18 to 25 age range as NAEP's was. This broader range introduced additional difficulties in reaching these individuals for assessment purposes. The approach which was selected to resolve these problems involved two sequential interviews: a telephone interview to identify and pre-qualify individuals for an in-person interview. Various methodological difficulties existed in the construction of instrumentation for both interviews, as well as the specification of literacy levels.

Telephone Interviews

For the telephone interview, two primary items to be used for pre-qualification included "level of education" and a spelling test. The former may have been subject to misinterpretation by the respondent as a result of the lack of face-to-face contact between interviewer and interviewee, and

the consequent difficulty in establishing the rapport that would promote valid results and responses. However, cross validation of results was possible in many cases using data from other items and sources.

For the second pre-qualifying item, the oral spelling test, different issues exist. The lack of a simple, direct measure of literacy skills, especially among older adults, made it necessary to assess skills which have been demonstrated in other studies to be somewhat related to literacy. The performance measure most suitable to the telephone interview methodology used in this study was deemed to be an oral spelling task. For this task a set of words with spelling difficulties ranging up to the sixth grade level was incorporated into the telephone interview. The administration procedure consisted of presenting the most difficult word first to the interviewee. Then, each word of lesser difficulty was presented until a word was spelled correctly. In following this approach, the task was made shorter for the higher literate individuals who might otherwise become bored with the task. In addition, the task became progressively easier for the lower literate individuals, who generally were able to spell a word correctly before reaching the easiest word on the spelling list. Only 12 of the 844 individuals selected into the personal interview sample were unable to score above zero on the oral spelling task.

Although the oral spelling test, in combination with demographic information, did serve moderately well to screen potential interview candidates, the process was not as effective as was hoped. In the future, it might be wise to consider altering the performance measure, possibly including three short items -- a spelling, mathematical, and document-oriented question -- at a pre-specified level of difficulty.

Personal Interviews

The personal interview instrumentation also posed some methodological problems which had to be overcome. The time and resources available to conduct the personal interviews were limited. Thus, the interview was designed to be 60 minutes long, although in practice it often went longer due to the interviewer's persistence and motivation to complete the interview.

The interview was constructed in two parts. The first part was a general questionnaire about respondent background, attitudes, and demographic characteristics. The second part was a workbook containing performance items in the three areas of literacy being assessed. The second part of the interview also varied considerably in time of administration, due to the great variation in level of literacy skills exhibited by the respondents. Anticipating this problem, the researchers arranged the items on the three subtests (reading comprehension, quantitative literacy, document utilization) in order of difficulty from least difficult to most difficult. Interviewers were trained to administer this workbook section and to continue administration until it was obvious that the respondent could no longer deal with the materials presented. In order to insure that a baseline was attempted on each subtest, the interviewers were required to attempt a minimum number of items with the respondent.

Data from the workbook provided scores on each of the three subtests. As might be expected, the levels of skill varied from respondent to respondent and also across the three subtests. Thus, the level of literacy of a given respondent varied depending upon the subtest examined. In order to develop a single comprehensive assessment and classification of individuals

on level of literacy, the scores on the three subtests were averaged to arrive at an overall score or literacy level. While this proved to be a convenient metric for study of characteristics of low literates, it may be argued that individual subtest scores would be equally, if not more meaningful, for use by literacy service providers.

Literacy Levels

Another methodological issue to be confronted in assessing levels of literacy was the specification of the levels themselves. The NAEP study of literacy among young adults, after which the current study was generally patterned, specified benchmark points along a literacy continuum which reflected different mastery levels. A decision was made by RBS researchers, based on the scores obtained, to expand on the metric used on the NAEP study from the original five to seven levels. In addition, each of the seven levels was defined in terms of a mid-point and an interval. A challenge which remains with regard to the levels is that of extending their usefulness and the usefulness of the three subtests for service providers. As a result of the classification refinements made in the present study, there is potential for further application of this type of literacy assessment for differential diagnosis and prescription of low literate adults enrolling in literacy service programs.

Sampling Issues and Interview Techniques

Several significant methodological issues arose in connection with sampling. While most of the data were obtained from the personal interview phase, the sample selected for personal interviews was dependent upon the preceding phase of telephone interviewing. Thus, problems encountered in

sampling for the telephone interview phase of the study also affected, indirectly, the personal interview phase. Issues involved in telephone interviewing principally revolved around potential biases introduced as a result of who has telephones and who is available when the telephone rings.

The 1980 census data indicate that almost all of the zip code areas within Philadelphia were populated by households of which 80 percent or more have telephones. The majority of the zip code areas targeted for oversampling in the current study were populated by households of which 90 percent have telephones. At first, the relatively small percentage of families in Philadelphia without telephones was considered to be a factor of little significance. This was due to the relatively large estimates in the local professional and popular literature depicting 30 to 40 percent of the population as low literate. However, more recent estimates generated by the NAEP study fix the percentage of low literates at a much lower level -- less than 12 percent. Given this information, the percentage of families without telephones looms much larger in potential significance. If the upper estimate on the percentage of low literates among adults in Philadelphia based on this study is accurate, then it would roughly approximate the percentage of households not having telephones as estimated from the 1980 census data. Thus, it is possible that the use of the telephone as the vehicle for conducting the pre-qualifying first round of interviews introduced a bias which systematically lowered the number of low literates in the sample. This potential bias was certainly somewhat counterbalanced by the reverse bias of oversampling expected low literacy areas.

The second methodological issue in the telephone interviewing process related to who was available to answer the phone. While time of day was

controlled by the caller, it is known that the probability of women being present within the household to answer the phone is greater than that of men being available. It is therefore possible that this factor may have partially accounted for the greater number of women being present in the telephone interview sample, which was then passed on to the personal interview sample. However, it should be noted that the Census data also indicate a majority of women over men in the population of Philadelphia as a whole.

In terms of the interviews themselves, techniques were also very important. The importance of training interviewers thoroughly cannot be overemphasized. Practice interviews, "what if" situations, and good record-keeping are the hallmarks of properly conducted personal interviewing. It was also effective to have a representative group of interviewers, in terms of sex and ethnicity, to establish rapport and gain acceptance in the homes of those being interviewed. Further, the tenacity of interviewers was an important trait in conducting the current study. The ability of interviewers to persevere through extremely lengthy interviews with low literates and to track down interviewees who had recently moved or who had incorrect tracking information was also essential to the successful conduct of the study.

Advisory Committees

The decision by RBS researchers to involve an advisory committee of service providers in conceptualizing, designing, and carrying out the study turned out to be one of the most important methodological strategies used in the study. The advisory committee proved to be extremely valuable during

every phase of the study and members were most cooperative in adapting their advice, suggestions, and information to the constraints of the study. The advisory committee provided valuable input on the questionnaire design and reviewed the instrumentation on an item by item basis, offering insights from their experience with low literate individuals about potential problems that might be encountered.

It was through contacts of the advisory committee that pilot testing of instrumentation was able to be carried out and instruments perfected to improve the quality of the study. In addition, it was representatives from the advisory committee who facilitated the translation of the questionnaires into Spanish for administration to Hispanics in the population. After preliminary analysis of the results, it was the advisory committee which offered reactions and provided in-depth consideration of interpretations of those results, without attempting to influence the objectivity of the research or its findings.

The involvement of the advisory committee provided several additional benefits by participating in the design and implementation. It helped to legitimize the study within the community. Further it served as a core group to insure an interested audience for the results, an audience which would be ready to use the findings and their implications to improve service delivery.

6. CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

What can be concluded from this study of literacy in Philadelphia? Today's youth are more literate than their parents, but illiteracy problems have not been eradicated. The results suggest that a third of the population may be lacking sufficient literacy skills to serve their own welfare and contribute to society. The pertinent question is no longer one of "illiteracy," but of "how literate" an individual needs to be to survive in our present-day, technological society. This change in focus has serious implications for service providers and others in the city. Clearly policymakers, service providers, and researchers need to rethink many of the issues concerning literacy today and reassess where to go from here.

To quickly review, this study had three purposes:

- to profile of adult literacy skills in Philadelphia
- to study the characteristics of low literates in order to assist literacy service providers in efficiently and effectively targeting their efforts
- to advance the state of knowledge regarding literacy assessment methodology in order to facilitate similar studies in other cities.

In the previous three sections of this report, findings pertaining to these three questions were discussed. This final section attempts to draw conclusions from these findings, examine the implications, and make recommendations.

Conclusions

1. <u>The incidence of functional illiteracy may not be as high as has been sometimes reported</u>. Most of the individuals in this study had measurable literacy skills. Thus, although the study was not aimed at

providing a definitive count of the number of low literates in Philadelphia, the findings suggest that there is an upper limit of about 12 percent. Another 21 percent appear to have literacy needs that limit their productivity as members of society.

2. The issue of illiteracy is not as critical as that of level of literacy skills. The 11.4 percent of the study sample who were classified as "lower literates" were performing at about a fourth grade level. The next 21.4 percent, the "intermediates," performed at approximately a ninth grade level. The high unemployment rates and low levels of income of individuals in these two groups suggest that poor basic skills, poverty, and unemployment go hand in hand.

3. Lower literates tend to be older. Over 40 percent of the lower literate group were aged 61 or older, with almost 60 percent aged 51 or older.

4. Minorities are disproportionally represented among the lower literate group. Almost three-quarters of the lower literate group was composed of minorities. Moreover, within individual groups, Blacks were three times more likely to fall into the lower literate group as whites, and Hispanics were almost four times as likely.

5. Hispanics and Asians are overrepresented in the low literate group. Almost three times as many Hispanics and twice as many Asians were members of the lower group than the higher group. For those who were foreign-born, the data indicated almost a three-to-one chance that they will become part of the lower literate group if they are from Puerto Rico, and a two-to-one chance if they are from any other foreign country.

6. Literacy skills and years of schooling clearly are related. Almost three-quarters of the low literates and two-thirds of the intermediates had not completed high school. One-quarter of the lower literates had not even attended secondary school. The lower and intermediate groups also contained a number of individuals who were high school graduates, but who had clearly not mastered the requisite skills.

7. Lower literates have more physical problems than higher literates. Where less than one-quarter of the higher literates described themselves as having physical problems that could affect their ability to learn to read or write, almost two-thirds of the less literate population described such problems.

8. Lower literate persons have lower opinions of their schooling and themselves as learners than do higher literates; yet they have relatively high aspirations for further education. Twice as many individuals in the lower literate group rated their education as fair or poor, as compared with those in the higher literate group. Lower literates also were approximately twice as likely to see themselves as poor learners than were more literate individuals. Although approximately three-quarters of the lower literates had not completed high school, half wanted to do so, and almost a third even aspired to complete college. This may indicate that, despite a poor academic self-image or difficult experiences in one or more schools, less literate persons still want to further their education.

9. Low literacy, low income, and unemployment go hand in hand. Lower literates are frequently unemployed with family incomes of less than $10,000. Almost two-thirds of the lower literate group earned less than $20,000, and another 22 percent earned less than $10,000. Similarly, six

out of ten of the lower literates were unemployed, compared with four out of ten of the intermediates and less than two out of ten of the higher literates.

10. When employed, lower literates tend to have blue collar jobs, and have lower job aspirations. A much larger percentage of lower literates were employed in blue collar jobs than are higher literate individuals. Moreover, as literacy skills increase, the desire for white collar jobs increases. Where only about a quarter of the lower literates aspired to white collar jobs, close to half of the intermediates and more than three-quarters of the higher literates aspired to such jobs.

11. Lower literates have sufficient skills to perform a variety of household tasks involving some measure of reading and writing, although they do so with less frequency than do higher literates. More than 75 percent of the lower literates reported paying their bills themselves. Furthermore, almost 70 percent reported using a phone book, as compared with 83 and 91 percent of the intermediates and higher literates respectively. As household tasks became more complicated, fewer lower literates performed them. Two-thirds did not use checkbooks, compared with 66 percent of the intermediates and 14 percent of the higher literates. Likewise, two-thirds of the lower literates did not use a cookbook, as compared with 41 percent of the higher literates.

12. Lower literates public use transportation more, and busses are the chosen method of transport. Lower literates tended to use public transportation more than higher literates, and almost 60 percent used busses. More than 82 percent either used busses or no public transportation at all.

13. Lower literates do write and read books, magazines, and papers; though with less frequency. Eight out of ten lower literates read newspapers weekly, two thirds read magazines weekly, and more than half read books and did some kind of writing.

14. Less literates read "The Daily News" or "The Philadelphia Inquirer", with the sections on state and local news, international news, and classified advertisements as the most widely read. Slightly more lower literates read "The Daily News" than the "Inquirer". Interestingly, lower literates were less likely to read more than one paper or multiple sections of a paper than were more literate individuals.

15. Many lower literates feel they have little or no need to improve their basic skills. Forty-six percent of the lower literates and 56 percent of the intermediates reported five or fewer literacy needs. Skills identified as most needing improvement were identical across the three literacy groups -- completing one's income tax, reading maps, helping children with school, and reading a thermometer. In all cases, however, lower literates felt more need to improve their skills than did intermediates or higher literates.

16. Lower literates clearly know where to go for help with basic skills, but few choose to go; moreover, most of those who enroll in a program drop out. Almost 90 percent of the lower literates knew of one or two places to go for literacy assistance, but three-quarters have never gone for help. Of the approximately one-quarter who have sought help, 60 percent have dropped out of the programs.

17. Methodologically, the combination of telephone and personal interviews represent an effective approach to research on adult literacy.

Telephone techniques can be effective in identifying individuals for the sample and administering brief, simple instruments. The personal interviews were effective in dealing with more complex information needs.

18. NAEP instrumentation provides a useful means for standardization of literacy measures and comparison to existing data bases in the study of literacy. The NAEP instruments, scoring procedures, and data base were very helpful in conducting this study and are recommended for use in similar research.

19. Using a local advisory team composed of literacy policy makers and service providers is very beneficial. Not only do they have first hand knowledge of the community that can help in all phases of the project, but their involvement all along the way ensures the legitimization of the work and local use of the results.

Implications

1. This study supports the NAEP findings that most people can read and write to some degree. However, the problems of those who do not have sufficient literacy skills to be successful in their lives are multifaceted and can not be solved by literacy service providers alone. They involve schools, social agencies, business and industry, government organizations, and others. These groups traditionally have not cooperated effectively; yet, improved collaboration is critical if Philadelphia is to deal with the issue of low literacy and its attendant side effects.

2. Despite business concerns with the low literacy skills of much of the local workforce, many individuals, even those with the least skills, do not perceive the need to improve their abilities. To entice many of those

with need into a literacy program, creative marketing may be needed. For example, a high percentage of the less literates want to obtain high school and/or college degrees. Creative programs either at the workplace or at literacy centers leading to degrees may be likely to draw people. Lower literates and intermediates also want to improve their job status (or simply find jobs). Programs that provide literacy instruction along with job placement may be more attractive. If a company can promise opportunities for advancement or pay raises to individuals who upgrade their skills, more individuals may be likely to take courses.

3. Literacy service providers need to devote more time and study to the question of how to retain those individuals who seek help in their literacy service centers. Many are dropping out before completion.

4. For service providers, the subject of program curriculum also is important. The findings of this study suggest several questions. Should emphasis be placed on the most basic of skills, or are higher-level skills important to teach? How does the possible need for a more advanced curriculum, one that incorporates such topics as critical thinking skills, communications, higher levels of math, or even foreign languages affect the traditional content of literacy courses? What delivery methods need to be used in a high technology, service-oriented society?

5. The high percentage of minorities and immigrants among the lower literates should be of tremendous concern to all. Lack of education clearly perpetuates a cycle of dependency, deprivation, and delinquency. There is no question that if we do not improve our delivery of educational services to this at risk population, we will all be at risk.

6. Although a high percentage of low literates are not high school graduates, a significant number have received high school diplomas. That these individuals managed to graduate while having evident literacy skill needs must lead one to question the effectiveness of the educational system. Also, the high percentage of non-high school graduates suggests the continued need to initiate new and support old dropout prevention programs and programs for at-risk youth at all levels of the system, from pre-school through high school.

Recommendations

1. A literacy marketing plan needs to be designed to reach those most in need of literacy training. On one level, this means advertising in places where lower literates are wont to go. On another level, marketing means doing a better job of communicating the skills that individuals will need to get and keep jobs. If lower literates continue to feel that they have no literacy needs, there will be no reason for them to attempt to improve themselves.

2. Service providers need to develop guidelines for efficiently allocating their resources to the different individuals who need their services -- the old, immigrants, at-risk youth -- in ways that are most productive for society at large.

3. Literacy service providers need to consider redesigning their curricula and activities in order to reflect both the higher skills of the clients and the technological demands of our society.

4. Literacy programs, both in centers or at the work site, need to offer distinct rewards to heighten motivation. These rewards could include

diplomas, job promotion, and higher salaries. Many of Philadelphia's businesses and service providers have developed successful innovative practices; these should be identified and made available to serve as models.

5. Evaluation of the effectiveness of different types of literacy programs, both at the work site and in other environments, should be carried out in order to more clearly identify what is and is not working.

6. The problem of low literacy exists in combination with other social problems requiring the skills and efforts of a divergent combination of individuals, businesses, social agencies, and government departments. Data from this study and assessments of available services should be used to determine what exists in Philadelphia, who is being helped by these programs, who is not, and what the most critical areas of need are. Then an effort can be made to foster cooperation among these varying groups and to plan for expansion of needed services.

7. Efforts to improve educational opportunities for minorities and immigrants need to receive continued attention and funding.

8. A continued, forceful preventative effort must be sustained in the public schools to assist at-risk youth, reduce dropouts, avoid social promotion, and foster the desire for continued education. In Philadelphia, this means supporting preventative programs such as pre-school care, the Franklin Institute's "Museum to Go", JobSearch, the Philadelphia High School Academies, the Motivation Program, and after-school tutoring.

9. This study should be replicated in other cities across the country both to provide city-specific data for policy makers and literacy service providers, and also to develop a national perspective of illiteracy in American cities.

It is hoped that the findings of the present study have helped to challenge old beliefs concerning "illiteracy" and have raised new questions more pertinent to the literacy needs of today's adults. These recommendations are offered as first steps in addressing these new questions as literacy policy makers, service providers, and researchers work toward finding new answers.

BIBLIOGRAPHY

Ackland, H. (1976, July). If reading scores are irrelevant, do we have anything better? Educational Technology, 16(7), 25-29.

Adult Performance Level Project. (1977). Final report: The adult performance level study. Washington, D.C.: U.S. Office of Education.

Cervero, R. M. (1985, Fall). Is a common definition of adult literacy possible. Adult Education Quarterly, 36(1), 50-54.

Clark, R. A. (1984). Definitions of literacy: Implications for policy and practice. Adult Literacy and Basic Education, 8(3), 133-145.

Dillman, D. A., Gallegos, J. G., & Frey, J. H. (1976, Spring). Reducing refusal rates for telephone interviews. Public Opinion Quarterly, 40(1), 66-78.

Fisher, D. C. (1978). Functional literacy and the schools. Washington, D.C.: National Institute of Education.

Gadway, C. J., & Wilson, H. A. (1976). Functional literacy: Basic reading performance. Denver: Education Commission of the States.

Gold, P. C. (1984, January). Literacy training in penal institutions. Paper presented at the National Adult Literacy Conference, Washington, D.C.

Gray, W. S. (1969). The teaching of reading and writing. Switzerland: Unesco.

Groves, R. M. & Kahn, R. L. (1979). Surveys by telephone. New York: Academic Press.

Groves, R. M. & Mayilavy, L. J. (1981). Increasing response rates to telephone surveys: A door in the face or a face in the door? Public Opinion Quarterly, (45-3), 346-358.

Harris, L. & Associates, Inc. (1970). Survival literacy study. Congressional Record. (pp. 38036-38040). Washington, D.C.: National Reading Center.

Harris, L. & Associates, Inc. (1971). The 1971 national reading difficulty index: A study of functional reading ability in the United States, for the National Reading Center. Washington, D.C.: The National Reading Center.

House of Representatives Subcommittee on Post-secondary Education. (1982, December). Oversight hearing on adult illiteracy. Committee on Education and Labor. (ERIC Document Reproduction Service No. ED 244 112)

Hunter, C. & Harmon, D. (1979). Adult literacy in the United States. New York, NY: McGraw Hill Book Company.

Kirsch, I. S. & Guthrie, J. T. (1977-78). The concept and measurement of functional literacy. Reading Research Quarterly, 13(4), 486-507.

Kirsch, I. S. & Jungeblut, A. (1986). Literacy: Profiles of America's young adults. Final Report. Princeton, NJ: Center for the Assessment of Educational Progress.

Levine, K. (1982, August). Functional literacy: Fond illusions and false economies. Harvard Educational Review, 52(3), 249-266.

Lewis, L. H. (1984). Support systems: An essential ingredient for high-risk students. Adult Literacy and Basic Education, 8(2), 73-79.

Mattleman, M. S. (1984, August). Mayor's Commission on Literacy in Philadelphia: Final narrative/report. Harrisburg, PA: Pennsylvania State Department of Education, Division of Adult and Continuing Education. (ERIC Document Reproduction Service No. ED 246 263)

Mikulecky, L. (1984, December). Preparing students for workplace demands. Journal of Reading, 50, 253-257.

Murphy, R. T. (1973). Adult functional reading study. Princeton, NJ: Educational Testing Service. (ERIC Document Reproduction Service No. ED 109 650)

Murphy, R. T. (1975). Assessment of adult reading competence. In D. M. Neilson & H. F. Hgelm (Eds.), Reading and career education (pp. 50-61). Newark, DE: International Reading Association.

Nafzigher, D. H., Thompson, R. B., Hiscox, M. D., & Owen, T. R. (1975). Tests of functional adult literacy: An evaluation of currently available instruments. Portland, OR: Northwest Regional Educational Laboratory.

National Center for Education Statistics. (1984). The condition of education. Washington, D.C.: Government Printing Office.

O'Neil, M. J. (1979). Estimating the nonresponse bias due to refusals in telephone surveys. Public Opinion Quarterly, 43(2), 218-232.

Stedman, L. C. & Kaestle, C. F. (1986). An investigation of crude literacy, reading performance, and functional illiteracy in the United States, 1880 to 1980. (Program Report 86-2). Madison, WI: Wisconsin Center for Educational Research, School of Education, University of Wisconsin-in-Madison.

Stedman, L. C. & Kaestle, C. F. (1987, Winter). Literacy and reading performance in the United States from 1880 to the present. Reading Research Quarterly, 22(1), 8-46.

Sticht, T. (Ed.). (1975). Reading for working. A functional literacy anthology. Alexandria, VA: Human Resources Research Organization.

Sticht, T. G., Caylor, J. S., Kern, R. P. & Fox, L. C. (1972, Spring). Project REALISTIC: Determination of adult functional literacy skill levels. Reading Research Quarterly, 7(3), 424-465.

UNESCO. (1947). Fundamental education: Common ground for all peoples. New York, NY: Macmillan.

U.S. Bureau of the Census. (1987). Educational attainment in the United States: March 1982 to 1985. (Current Population Reports, Series P-20, No. 415). Washington, D.C.: U.S. Government Printing Office.

Venezky, R. L., Kaestle, C. F., & Sum, A. M. (1987, January). The subtle danger (ETS Report No. 16-CAEP-01). Princeton, NJ: Center for the Assessment of Educational Progress.

Wolfe, L. M. (1979, August). Characteristics of persons with and without home telephones. Journal of Marketing Research, 16, 421-5.

APPENDIX

Advisory Committee Members

ADVISORY COMMITTEE MEMBERS

1. Ms. Melissa Buckingham - Head of Community Services, Office of Work with Adults and Young Adults, Free Library of Philadelphia, Philadelphia, PA.

2. Ms. Carole Goertzel - Executive Director, Lutheran Settlement House Women's Program, Philadelphia, PA.

3. Dr. Marciene Mattleman - Executive Director, The Mayor's Commission on Literacy, Philadelphia, PA.

4. Ms. Linda Pollack - Field Coordinator, The Mayor's Commission on Literacy, Philadelphia, PA.

5. Dr. Lucille Richards - Field Coordinator, The Mayor's Commission on Literacy, Philadelphia, PA.

6. Ms. Jean Sprigs - Field Coordinator, The Mayor's Commission on Literacy, Philadelphia, PA.

7. Ms. Jackie Nix-Starks - former Director of Training, YMCA Chapter 2 Reading Program, Philadelphia, PA.

8. Ms. Lydia Hernandex-Velez, Esq. - Assistant to the President, Temple University, Philadelphia, PA.

9. Ms. JoAnne Weinberger - Executive Director, The Center for Literacy, Philadelphia, PA.